

# INVITATION TO BID



Department Of Executive Services  
Finance And Business Operations Division  
**Procurement And Contract Services Section**  
206-684-1681 Tty Relay: 711

Advertised Date: **April 20, 2006**

ITB Title: **Constant Speed Rotary Lobe Pump**  
ITB Number: **ITB 06-049 PXR**  
Due Date: **May 4, 2006- 2:00 P.M.**  
Buyer: Paul Russell, [paul.russell@metrokc.gov](mailto:paul.russell@metrokc.gov), 206-684-1054

Sealed Bids are hereby solicited and will **Only** be received by:  
King County Procurement Services Section  
Exchange Building, 8<sup>th</sup> Floor  
821 Second Avenue  
Seattle, WA 98104-1598  
Office Hours: 8:00 a.m. - 5:00 p.m.  
Monday - Friday

## BIDDERS MUST COMPLETE AND SIGN THE FORM BELOW (TYPE OR PRINT)

Company Name

Address

City / State / Postal Code

Signature

Authorized Representative / Title

Email

Phone

Fax

Delivery guaranteed: ☐ Yes ☐ No

Days after order:

Prompt Payment Discount Terms:

%- Days, Net

Prime Proposer SEDB / DBE Certification number

This Invitation to Bid will be provided in alternative formats such as Braille, large print, audiocassette or computer disk for individuals with disabilities upon request.

# CONTRACT

THIS CONTRACT, made this \_\_\_\_ Day of \_\_\_\_, 2006 by and between King County, Washington, (hereinafter "County") and \_\_\_\_ (hereinafter "Contractor").

WITNESSETH:

WHEREAS, the County has caused Contract documents for:

**Contract No:** \_\_\_\_ **Contract Title:** **Constant Speed Rotary Lobe Pump,**

to be prepared for certain Work as described therein; and

WHEREAS, the Contractor has assured the County that it has the specialized expertise and experience necessary to properly Provide the goods and Services in a timely manner and that its Bid includes all of the functions and features required for the goods and Services; and

WHEREAS, the County has accepted the Contractor's offer to provide the goods and Services in accordance with the Contract's terms, Scope of Work and Bid documents;

WHEREAS, by executing this Contract, the Contractor represents that the waiver of the Contractor's immunity under industrial insurance, Title 51 RCW, as set forth in the Contract documents was mutually negotiated by the parties;

NOW THEREFORE, in consideration of the mutual covenants and agreements of the parties herein contained and to be performed, the Contractor hereby agrees to supply the goods and Services at the price and on the terms and conditions herein contained, and to assume and perform all of the covenants and conditions herein required of the Contractor, and the County agrees to pay the Contractor the Contract price Provided herein for the supply of the goods and Services and the performance of the covenants set forth herein.

THE FURTHER TERMS, CONDITIONS AND COVENANTS of the Contract are set forth in the following exhibit parts each of which is attached hereto and by this reference made a part hereof in the following order of precedence; **[1]** Contract Amendments; **[2]** the Contract Document which includes: Submittal response form (Page 1), Exhibit A – Bid Pricing, Exhibit B – Registration, Exhibit D – Contracting Opportunities Program, Definition of Words and Terms, Standard Contractual Terms and Conditions, Specific Contractual Terms and Conditions, Insurance Requirements, Scope of Work, Attachments C) Equal Benefit Worksheet and Declaration Form, D) Personnel Inventory Report, E) Affidavit and Certificate of Compliance, O) Contractor's Insurance Forms; and **[3]** ITB Addenda

**COMPANY NAME:** \_\_\_\_\_

**ACCEPTED BY:** \_\_\_\_\_

**KING COUNTY APPROVED BY:** \_\_\_\_\_

\_\_\_\_\_  
Authorized signature

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
*Name and Title (Print or Type)*

\_\_\_\_\_  
*Name and Title (Print or Type)*

**DATE ACCEPTED:** \_\_\_\_\_

**DATE APPROVED:** \_\_\_\_\_

## EXHIBIT A – BID PRICING

ITB NO: **06-049 PXR**

TITLE: **Constant Speed Rotary Lobe Pump**

NAME OF BIDDER: \_\_\_\_\_

We acknowledge that **Addenda numbered** \_\_\_\_\_ **to** \_\_\_\_\_ have been delivered to us and have been examined as part of the Contract documents.

We acknowledge that attaching our terms or modifying the ITB terms may result in our bid being rejected.

The Constant Speed Rotary Lobe Pump will be awarded to the lowest total price Responsible, Responsive bidder. Quantity will be multiplied by the unit price to calculate the grand total.

### A. Bidder must bid on all items

Qty	Description	Unit Price	Model	Part #
PUMP				
1	Constand Speed Rotary Lobe Pump	\$		
SPARE PARTS (see Technical Specifications 11320 – 2.04)				
2 sets	Drive unit seals	\$		
2 sets	Spare rotor sets, as specified	\$		
1 rebuild kit	Including O-rings, gaskets, liners, and wear plates	\$		

### B. Performance

Submittals and completed Pump shall be delivered within:

- a) **Submittals** - 30 days of NTP (per Technical Specifications Section 11060 – 1.03 and Section 11320 – 1.03)
- b) **Pump** - 120 days of County approving submittals, ( or 160 days of NTP – which ever is longer).

### C. Bidders shall at a minimum include the following information:

- a) Pump performance curves.
- b) List the pumps' operational speed and power requirements at the rated operating condition specified in paragraph 11320-1.01.E. As stated in Section 11320, the rated operating condition shall be based on pumping a co-thickened primary and secondary sludge at a concentration between 5 and 7% total solids.

Pump operational speed \_\_\_\_\_

Power requirements \_\_\_\_\_

Failure to include this information with the bid may render the bidder non-responsive and shall be sufficient cause for rejection without further consideration.

## EXHIBIT D – CONTRACTING OPPORTUNITIES PROGRAM

The King County Contracting Opportunities Program is a public contracting assistance program that is being implemented on a 1 year pilot basis. The purpose of the Program is to maximize the participation of Small Economically Disadvantaged Businesses through the use of a five percent (5%) incentive factor in the award of King County contracts for the purchase of goods and services.

A "Small Economically Disadvantaged Business" (SEDB) means that a business and the person or persons who own and control it are in a financial condition which puts the business at a substantial disadvantage in attempting to compete for public contracts. The relevant financial condition for eligibility under the Program is based on a dollar ceiling for standard business classifications that is set at fifty percent (50%) of the Federal Small Business Administration (SBA) and Owners' Personal Net Worth less than \$750K dollars.

A "Certified Firm" means a business that has applied for participation in King County's Contracting Opportunities Program, and has been certified as an SEDB by the King County Business Development and Contract Compliance (BDCC) office. Information about becoming a Certified Firm, as well as a list of Certified Firms, may be obtained by contacting the BDCC office at 206-205-0700.

### Application of the 5% Incentive Factor and Contract Award:

1. This contract Will be awarded to the lowest responsive, responsible bidder; provided, however, that if the bid price of a responsive, responsible SEDB is within five percent (5%) of the bid price of the lowest responsive, responsible bidder, and that bidder is not a SEDB, then the contract Shall be awarded to the low SEDB bidder.
2. All bidders must complete the information required in Exhibit B, Registration, Bidder Identification, for this Invitation To Bid.
3. ☐ Check if firm submitting Bid is a Small Economically Disadvantaged Business Enterprise certified by King County that will perform the entire contract unassisted.

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**Name of Certified Business**

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**Certification Number**

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**Owner's Signature**

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**Contact Person and Phone Number**

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## DEFINITION OF WORDS AND TERMS

Words and terms shall be given their ordinary and usual meanings. Where used in the Contract documents, the following words and terms shall have the meanings indicated. The meanings shall be applicable to the singular, plural, masculine, feminine and neuter of the words and terms.

Acceptance or Accepted: Written documentation of the County's determination that the Contractor's Work has been completed in accordance with the Contract.

Addendum/Addenda: Written additions, deletions, clarification, interpretations, modifications or corrections to the solicitation documents issued by the County during the Solicitation period and prior to contract award.

Bidder: Individual, association, partnership, firm, company, corporation or a combination thereof, including joint ventures, submitting a bid to perform the Work.

Buyer: Individual designated by the County to conduct the Contract solicitation process, draft and negotiate contracts, resolves contractual issues and supports the Project Manager during Contract performance.

Cost Analysis: The review, evaluation and verification of cost data and the evaluation of the specific elements of costs and profit. Cost analysis is the application of judgment utilizing criteria to project from the data to the estimated costs in order to form an opinion on the degree to which proposed costs represent what the Contract should cost, assuming reasonable economy and efficiency.

Day: Calendar Day.

Documentation: Technical publications relating to the use of the Work to be Provided by Contractor under this Contract, such as reference, user, installation, systems administration and technical guides, delivered by the Contractor to the County.

Final Acceptance: The point when King County acknowledges that the Contractor has preformed the entire Work in accordance with the Contract.

Price Analysis: The process of examining and evaluating a price without evaluating its separate cost elements and proposed profit.

Project Manager: The individual designated by the County to manage the project on a daily basis and who may represent the County for Contract administration. This Contract may be part of a larger County project.

Provide: Furnish without additional charge.

RCW: The Revised Code of Washington.

Technical Specifications: A section of the Contract consisting of written descriptions of Services to be performed, or the goods to be provided or the technical requirements to be fulfilled under this Contract contained within Scope of Work Section.

Subcontractor: The individual, association, partnership, firm, company, corporation, or joint venture entering into an agreement with the Contractor to perform any portion of the Work covered by this Contract.

Work: Everything to be provided and done for the fulfillment of the Contract and Shall include all Goods and Services specified under this Contract, including Contract Amendments and settlements.



## **SECTION 1 - INSTRUCTIONS TO BIDDERS**

### **1-1 Introduction**

The Invitation for Bid is to establish a contract to purchase one **Constant Speed Rotary Lobe Pump**, and spare parts as-needed. The County will be neither obligated nor restricted to the quantities indicated. The bidder shall also include all printed information available for the pump. See Section 7 for the Statement of Work.

#### **Background**

The rotary lobe pump will allow South Treatment Plant to heat raw thickened sludge before it is fed to the anaerobic digesters. Preheating thickened raw sludge adds flexibility and provides an opportunity to realize several process and biosolids improvements without adding complexity. Heating is accomplished by pumping the sludge through a heat exchanger while circulating the tank contents.

With the pump, South Plant can operate one or more of the digesters “in series” rather “in parallel”. The digester in-series configuration requires a different distribution of heat and solids loading than the parallel configuration requires. Preheating the thickened sludge enables the plant to meet the system heating requirements without making substantial and expensive modifications, such as changing the method of heating, changing the type of heat exchangers, or increasing the size of our current heat exchangers.

The County expects to save costs with the purchase of this pump as a result of decrease in volatile solids. Reduction in Volatile solids increases gas production and reduces the mass of solids hauled to our land application sites.

In-series digestion also provides benefits of improved biosolids quality, a goal of King County’s Environmental Management system (EMS) program. Increased volatile solids reduction may also indicate the material would be more stable and that the potential vector attraction would be reduced.

The preheating pump will also extend the period of time in which South Plant can operate in parallel with only three of the four digesters. This configuration gives the plant the flexibility to clean and repair digesters, even during times of high loadings. These savings are a result of the reduction in pump and compressor operation and the reduction in the heat loss through the surface of the digester. Pre-heating the thickened sludge allows flexibility of operating the digesters in multiple ways to achieve savings and, in the case of the in-series option, a higher quality product.

### **1-2 Purpose of Bid**

By signing this Contract, King County does not guarantee that the Contractor Will receive any orders for the goods or services. In addition, King County is not giving the Contractor the exclusive right and legal obligation to fill all of the County’s needs for the goods described in this Contract. King County reserves the right to Contract with any other entity for the goods or services described herein.

### **1-3 Bid Submission**

Sealed bids shall contain all required attachments and information, be sealed and submitted to the County (hereinafter “County”), Procurement and Contract Services Section, Mailstop EXC-ES-0871, Eighth Floor, Exchange Building, 821 Second Avenue, Seattle, Washington 98104-1598 no later than 2 p.m. Seattle time per date and time on cover.

The Bidder accepts all risks of late delivery of mailed bids or of misdelivery regardless of fault. Bids properly and timely submitted Will be publicly opened.

Bids shall only be accepted from Contractors and joint ventures able to complete the Contract Work. Subcontractors and joint Bidders are not allowed to submit stand alone ITBs.

If a document holder chooses not to submit a bid, the document holder is requested to advise the Buyer by email if they desire to remain listed for the subject of this ITB and stating the reason they could not submit a bid at this time.

Note: This ITB is available on the Web at <http://www.metrokc.gov/procurement> and by choosing the "RFPs, RFQs, ITBs" menu tab, then click the "New" menu tab, then click on "Goods & Services", and look for ITB 06-049 pxx. Persons who copy the document from the Internet shall inform Paul Russell that they have received the document. If they fail to inform the Buyer, they shall not be notified of Addenda as issued.

#### **1-4 Cancellation of ITB or Postponement of Bid Opening**

The County reserves the right to cancel the ITB at any time or change the date and time for submitting bids by announcing same prior to the date and time established for bid submittal.

#### **1-5 ITB Signature**

Each ITB submission shall include an Invitation to Bid Submittal Response Form signed by an authorized representative of the Bidder.

#### **1-6 Addenda**

Each bid shall include acknowledgment of receipt and review of all "**Addenda**" issued during the bid process in Exhibit A – Bid Pricing.

At any time, if the County changes, revises, deletes, clarifies, increases, or otherwise modifies the ITB, the County shall issue a written Addendum to the ITB.

#### **1-7 Questions and Interpretation of the ITB**

No oral interpretations as to the meaning of the ITB shall be made to any Bidder. Questions, requests for interpretation, clarification, additions or deletions to the technical or contractual terms in this ITB shall be e-mailed to the Buyer at the County's Procurement Services Division at the location indicated on the ITB cover at least ten (10) Days before the date established for submitting bids. Bidders shall not rely upon any oral statements or conversations, with county employees at the pre-bid conference (if held).

Any interpretation deemed necessary by the County shall be in the form of an Addendum to the ITB and when issued shall be delivered as promptly as is practicable to all parties to whom the ITB has been issued. All Addenda shall become part of the ITB and any subsequently awarded Contract. Any changes to the ITB shall follow the Addenda process in Subsection 1-6.

#### **1-8 Inquiries**

Inquiries concerning the procurement process shall be directed to Paul Russell (see cover of this ITB).

**Communications Concerning This Bid, With Other Than The Listed Buyer May Cause The Bidder To Be Disqualified.**

#### **1-9 Alterations to Documents**

Any addition, limitation or provision made with or attached to the Bid may render it non-responsive and/or irregular and be cause for its rejection. Alteration by erasure or interlineations must be explained or noted over the signature of the Bidder. No oral, telegraphic, Internet, telephonic or facsimile bids or modifications Will be considered.

#### **1-10 Examination of Bid and Contract Documents**

The submission of a bid shall constitute an acknowledgment upon which the County may rely that the Bidder has thoroughly examined and is familiar with the ITB, including any work site identified in the

ITB, and has reviewed and inspected all applicable statutes, regulations, ordinances and resolutions addressing or relating to the goods and Services to be Provided hereunder.

The failure or neglect of a Bidder to receive or examine such documents, work sites, statutes, regulations, ordinances or resolutions shall in no way relieve the Bidder from any obligations with respect to its bid or to any Contract awarded pursuant to this ITB. No claim for additional compensation shall be allowed which is based upon a lack of knowledge or misunderstanding of this ITB, work sites, statutes, regulations, ordinances or resolutions.

#### **1-11 Modification of Bid or Withdrawal of Bid Prior to Bid Due Date**

At any time before the time and date set for submittal of bids, a Bidder may request to withdraw or modify its bid. Such a request shall be in writing signed by an authorized representative of Bidder as identified on the Submittal Response Form of the ITB. All bid modifications shall be made in writing, executed and submitted in the same form and manner as the original bid.

#### **1-12 Cost of Bid**

The County is not liable for any costs incurred by Bidder in the preparation of bids submitted in response to this ITB.

#### **1-13 Bid Withdrawal**

Except for claims of error granted by the County, no Bidder may withdraw a bid after the date and time established for submitting bids, or before the award and execution of a Contract pursuant to this ITB, unless the award is delayed for a period exceeding the period for bid effectiveness. The County reserves the right to request a Bidder or Bidders to grant an extension of such effective period.

Requests to withdraw a bid due to error must be submitted in writing along with supporting evidence for such claim including cost breakdown sheets. Requests must be delivered to the County within forty-eight hours after the opening of Bids. The County reserves the right to require the submittal of other bid records or information, as the County may deem necessary to evaluate the request. Any review by the County of a bid and/or any review of such a claim of error, including supporting evidence, create no duty or liability on the County to discover any other Bid error or mistake, and the sole liability for any Bid error or mistake rests with the Bidder.

#### **1-14 Bid Requirements**

The bid Will contain the completed:

[Submittal Response Form](#) (ITB cover)

[Contract](#)

[Exhibit A](#)

- Bid Pricing

[Exhibit D](#)

- Contracting Opportunities Program (if applicable)

The above completed pages and all required additional documents Shall be placed in a sealed envelope with the enclosed sticker filled out and attached to the outside of the envelope.

#### **1-15 Forms Required Before Contract Signing**

The Bidder shall submit within five (5) Days of receipt of written request from the County the following documents and insurance and any applicable bonds, sworn statements, and other conditions precedent to formation of the Contract.

Failure by the Bidder to submit required documents shall result in rejection of the bid.

[Attachment C](#)

Equal Benefit Worksheet and Declaration Form

[Attachment D](#)

Personnel Inventory Report – Complete, sign and submit.

[Attachment E](#) Affidavit and Certificate of Compliance Regarding Equal Employment Opportunity – Complete, sign and submit.

[Attachment F](#) Statement of Compliance – Union or Employees Agency Statement

Certificate of Insurance and Endorsements – Have Insurance Agent e-mail or Fax to Buyer evidence of insurance from insurer(s) satisfactory to the County certifying to the coverage of insurance set forth in this ITB.

Please contact the King County Procurement & Contracts Services Section at 206-684-1681, or the buyer listed in this document to obtain a copy of these forms and/or have questions regarding their completion. Copies of the forms can also be viewed/downloaded by clicking on the hyperlinks above or visiting <http://metrokc.gov/procurement/forms/gs.aspx>

#### **1-16 Collusion**

By signing this bid, the Bidder declares that they have not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the work included in this ITB.

If the County determines that collusion has occurred among Bidders, none of the Bids from the participants in such collusion shall be considered. The County's determination shall be final.

#### **1-17 Bid Price, Taxes and Effective Date**

- A. The Bid price shall include everything necessary for the prosecution and completion of the Contract including but not limited to furnishing all Work including: materials, equipment, supplies, tools, plant and other facilities and all management, supervision, labor and service, except as may be Provided otherwise in this ITB.
- B. Bid Prices shall include all freight charges, FOB to the designated delivery points.
- C. Taxes: Sales/use taxes and Federal excise taxes shall not be included in the Bid price. The County shall pay any Washington State sales/use taxes applicable to the Contract price or tender an appropriate amount to the Contractor for payment to Washington State. The County is exempt from Federal excise taxes. All other government taxes, duties, fees, licenses, permits, royalties, assessments and charges shall be included in the bid price.
- D. In the event of a discrepancy between the unit price and the extended amount for a bid item, the unit price will govern.
- E. The bid shall remain in effect for 90 Days after the bid close date.

#### **1-18 Protest Procedures**

- A. Form of Protest:

In order to be considered, a Protest shall be in writing, addressed to the Manager of the King County Procurement and Contract Services Section of the Department of Executive Services, and include:

- 1. The name, address, and phone number of the Bidder protesting, or the authorized representative of the Bidder;
- 2. The ITB Number and Title under which the protest is submitted;
- 3. A detailed description of the specific grounds for protest and any supporting documentation. It is the responsibility of the protesting Bidder to supplement its protest with any subsequently discovered documents prior to the Manager's decision; and
- 4. The specific ruling or relief requested.

B. Who May Protest.

1. Protests prior to bid due date based on Scope of Work or other terms in the ITB document -- any prospective Bidder.
2. Protests following bid due date -- any Bidder submitting a bid on time.

C. Time to Protest.

Protests based on Scope of Work or other terms in the ITB document shall be received by the County no later than ten (10) Days prior to the date established for submittal of Bids. The County shall receive protests based on other circumstances within five (5) Days after the protesting Bidder knows or should have known of the facts and circumstances upon which the Protest is based. In no event shall a Protest be considered if all Bids are rejected or after award of the Contract.

D. Determination of Protest.

Upon receipt of a timely written Protest, the Procurement Manager shall investigate the Protest and shall respond in writing to the Protest prior to the award of Contract. Except as Provided below, the decision of the Procurement Manager shall be final.

E. Reconsideration of Manager's Decision.

A financially interested Bidder or Contractor may request that a Manager's adverse decision be reviewed by the Director, of the King County Finance and Business Operations Division ("Director") on a reconsideration basis only. The only justifications for reconsideration are (1) new data, relevant to the underlying grounds for protest and unavailable at the time of the Protest to the Manager; or (2) the Manager made an Error of law or regulation. The following procedures shall be followed for a reconsideration of the Manager's decision:

1. Form of Request for Reconsideration. In order to be considered, a Request for Reconsideration shall be filed with the Director in writing and include:
  - a. Name, address, and telephone number of the Person protesting or their authorized representative;
  - b. A copy of the written decision of the Manager; and
  - c. Justification for reconsideration by the Director, including all pertinent facts and law on which the Bidder is relying.
2. Time for filing Request for Reconsideration. The financially interested Bidder shall file the Request for Reconsideration no later than five (5) Days of receiving the Procurement Manager's decision.
3. Review of Manager's Decision. Upon receipt of a Request for Reconsideration, the Director or his/her designee shall review 1) the information submitted to and reviewed by the Manager and 2) the decision of the Manager, and shall thereafter issue a final determination regarding the Request for Reconsideration. No other information shall be reviewed unless the basis for the request for reconsideration is new data.

F. Failure to Comply

Failure to comply with the procedures set forth herein may render a Protest untimely or inadequate and may result in rejection thereof by the County.

**1-19 Supported Employment Program**

The County encourages the creation of supported employment programs for developmentally and/or severely disabled individuals. The County itself has such a program and is actively seeking to do business with those Contractors and Consultants that share this employment approach. If your firm has such a program, or intends to develop such a program during the life of this Contract, please submit Documentation supporting this claim with your bid. If you have questions, or need additional information, please contact the Community and Human Services Division, Developmental Disabilities Division, 206-296-5268.

## SECTION 2 - BID EVALUATION & CONTRACT AWARD

### 2-1 Evaluation of Bids

Bids Will be evaluated by the County to determine which bid, if any, should be accepted in the best interest of the County. When [Exhibit D](#), "King County Contracting Opportunities Program", is incorporated in the ITB, the determination of lowest responsive, responsible bidder Will include the application of the five (5) percent incentive factor for Small Economically Disadvantaged Businesses (SEDB).

#### A. Responsiveness

The County Will consider all the material submitted by the Bidder to determine whether the Bidder's offering is in compliance with the terms and conditions set forth in this ITB.

#### B. Responsibility

1. The County shall consider all the material submitted by the Bidder, and other evidence it may obtain otherwise, to determine whether the Bidder is capable of and has a history of successfully completing contracts of this type. This may include requiring the Bidder to Provide references from customers who have been Provided the same or equivalent Goods or Services. References shall include the names and addresses of the parties to whom such goods or Services were Provided and the name and phone number of contact Persons with such parties.
2. The following elements shall be given consideration by the County in determining whether a Bidder is responsible:
  - a. The ability, capacity and skill of the Bidder to perform the Contract or Provide the service required;
  - b. The character, integrity, reputation, judgment and efficiency of the Bidder;
  - c. Whether the Bidder has the financial resources and experience to perform the Contract properly and within the times specified;
  - d. The quality and timeliness of performance by the Bidder on previous contracts with the County and with other third parties, including, but, not limited to, the relative costs, burdens, time and effort necessarily expended by the County and such governments and agencies in securing satisfactory performance and resolving claims;
  - e. The previous and existing compliance by the Bidder with laws relating to public contracts or Services, including, but not limited to, Disadvantaged Business Enterprise (DBE) and equal employment opportunity requirements;
  - f. The history of the Bidder in filing claims and litigation on prior projects involving the County or third parties; and
  - g. Such other information having a bearing on the decision to award the Contract.

#### 3. Financial Resources

Submit proof of adequate financial resources, which would be available to the Bidder for the prosecution, and completion of the Work as required. Refusal to Provide such information when requested shall cause the bid to be rejected.

#### C. Financial Reporting

The Bidder Shall Provide a current copy of its Dun and Bradstreet report if requested by the County.

#### D. King County Contracting Opportunities Program

1. The King County Contracting Opportunities Program is a public contracting assistance program that is being implemented on a one (1) year pilot basis. The purpose of the Program is to maximize the participation of Small Economically Disadvantaged Businesses

- through the use of a five percent (5%) incentive factor in the award of King County contracts for the purchase of goods and services.
2. A "Small Economically Disadvantaged Business: (SEDB) means that a business and the person or persons who own and control it are in a financial condition which puts the business at a substantial disadvantage in attempting to compete for public contracts. The relevant financial condition for eligibility under the Program is based on a dollar ceiling for standard business classification that is set at fifty percent (50%) of the Federal Small Business Administration (SBA) and Owner's Personal Net Worth less than \$750K dollars.
  3. A "Certified Firm" means a business that has applied for participation in King County's Contracting Opportunities Program, and has been certified as an SEDB by the King County Business Development and Contract Compliance (BDCC) office. Information about becoming a Certified Firm, as well as a list of Certified Firms, may be obtained by contracting the BDCC office at 206-205-0700.

## **2-2 Rejection of Bids**

- A. The County reserves the right to reject any bid for any reason including, but not limited to, the following:
  1. Any bid which: 1) contains any omission, erasure or irregularity; 2) is incomplete, obscure, irregular or lacking necessary detail and specificity; 3) has any qualification, addition, limitation or provision attached to the bid; 4) omits a price where pricing is required; 5) has unbalanced pricing in the opinion of the County, 5) is not approved as being compliant with the requirements for equal employment opportunity or Domestic Partner Benefits;
  2. Any bid from Bidders who: in the sole judgment of the County) lack the qualifications or responsibility necessary to perform the Work; 2) fails or neglects to complete and submit any qualifications information within the time specified by the County, 3) is not registered or licensed as may be required by the laws of the state of Washington or local government agencies;
- B. In consideration for the County's review and evaluation of its bid, the Bidder waives and releases any claims against the County arising from any rejection of any or all bids, including any claim for costs incurred by Bidders in the preparation and presentation of bids submitted in response to this ITB. In addition, Bidders waive the costs of providing additional information requested or cost of modifications made to its internal structure, systems or organizations.
- C. The County reserves the right to waive informalities and irregularities in bids.
- D. The County Shall find non-responsive and reject any bid which does not comply with the DBE requirements under this ITB, if applicable.

## **2-3 Procedures When Only One Bid is Received**

If the County receives a single responsive, responsible bid, the County Shall have the right, in its sole discretion, to extend the bid acceptance period and may conduct a price or cost analysis on such bid. The Bidder Shall promptly Provide all cost or pricing data, documentation and explanation requested by the County to assist in such analysis. By conducting such analysis, the County shall not be obligated to accept the single bid; the County reserves the right to reject such bid or any portion thereof.

## **2-4 Insurance And Other Bid Requirements**

The Bidder to whom the County awards a Contract pursuant to this ITB shall file with the County evidence of insurance from insurer(s) satisfactory to the County certifying to the coverages of insurance set forth in this ITB. In addition any applicable bonds, sworn statements, and other conditions precedent to formation of the Contract shall be submitted within ten (10) Days of receipt of a written request from the County.

Failure by the Bidder to submit satisfactory evidence of insurance and other required condition precedent documents shall result in rejection of the bid.

## **2-5 Public Disclosure of Bids**

This procurement is subject to the Washington Public Disclosure Act, RCW 42.17.250 et seq. Bids submitted under this ITB shall be considered public documents unless the documents are exempt under the public disclosure laws. After the selection process has been concluded and a contract has been signed by both parties bids shall be available for inspection and copying by the public

If a Bidder considers any portion of its bid to be protected under the law, the Bidder shall clearly identify each such portion with words such as "**Confidential**," "**Proprietary**" or "**Business Secret**." If the County determines that the material is not exempt from public disclosure law, the County shall notify the Bidder of the request and allow the Bidder fifteen (15) Days to take whatever action it deems necessary to protect its interests. If the Bidder does not take such action within said period, the County shall release the portions of the bid deemed subject to disclosure. By submitting a bid, the Bidder assents to the procedure outlined in this subsection and shall have no claim against the County on account of actions taken under such procedure.

## **2-6 Contract Award**

Contract award, if any, shall be made by the County to the low, responsive, responsible Bidder. The County shall have no obligations until a Contract is signed between the Bidder and the County. The County reserves the right to award one or more contracts as it determines to be in its best interest.



## **SECTION 3 - STANDARD CONTRACTUAL TERMS & CONDITIONS**

### **3-1 Administration**

This Contract is between the County and the Contractor who shall be responsible for providing the Work described herein. The County is not party to defining the division of Work between the Contractor and its Subcontractors, if any, and the Scope of Work has not been written with this intent. The Contractor represents that it has or shall obtain all personnel, materials and equipment required to perform Work hereunder.

The Contractor's performance under this Contract may be monitored and reviewed by a Project Manager appointed by the County. Reports and data required to be Provided by the Contractor shall be delivered to the Project Manager. Questions by the Contractor regarding interpretation of the terms, provisions and requirements of this Contract shall be addressed to the Buyer or Project Manager for response.

### **3-2 Contract Changes**

No oral order or conduct by the County shall constitute a Contract change. Both parties shall agree to contract changes in writing.

If any Contract change causes an increase or decrease in the cost of, or the time required for performance of any part of the Work under this Contract, an equitable adjustment in the Contract price, the project schedule, or both shall be made and the Contract and all related purchase orders(s) modified and agreed to in writing by both parties. Every contract change may require a Cost or Price Analysis to determine the reasonableness of the proposed adjustments to Contract price or schedule. Contract changes do not require notice to sureties by County.

### **3-3 Price Analysis**

Price Analysis may be required by the County for the evaluation of contract changes, terminations, revisions to contract requirements or other circumstances as determined by the County.

### **3-4 Termination for Convenience/Default/Non-Appropriation**

#### **A. Termination for Convenience**

The County for its convenience may terminate this Contract, in whole or in part, at any time by written notice sent certified mail, return receipt requested, to the Contractor. After receipt of a Notice of Termination ("Notice"), and except as directed by the County, the Contractor shall immediately stop Work as directed in the Notice, and comply with all other requirements in the Notice. The Contractor shall be paid its costs, including necessary and reasonable Contract close-out costs and profit on that portion of the Work satisfactorily performed up to the date of termination as specified in the notice. The Contractor shall promptly submit its request for the termination payment, together with detailed supporting documentation. If the Contractor has any property in its possession belonging to the County, the Contractor shall account for the same and dispose of it in the manner the County directs. All termination payment requests may be subject to Cost or Price Analysis to determine reasonableness and compliance with the Contract, applicable laws and regulations.

#### **B. Termination for Default**

If the Contractor does not deliver Work in accordance with the Contract ,or the Contractor fails to perform in the manner called for in the Contract, or if the Contractor fails to comply with any material provisions of the Contract, the County may terminate this Contract, in whole or in part, for default as follows:

1. A Notice to Cure shall be served on the Contractor by certified mail (return receipt requested) or delivery service capable of providing a receipt. The Contractor shall have ten

- (10) Days to cure the default or provide the County with a detailed written plan, which indicates the time and methods needed to bring the Work into compliance and cure the default.
2. If the Contractor has not cured the default or the plan to cure the default is not acceptable to the County, the County may terminate the Contract Termination shall occur by serving a Notice of Termination by certified mail (return receipt requested) or delivery service capable of providing a receipt on the Contractor setting forth the manner in which the Contractor is in default and the effective date of termination;
  3. The Contractor shall only be paid for Work delivered and Accepted, or Work performed in accordance with the manner of performance set forth in the Contract less any damages to the County caused by or arising from such default. All termination payment requests are subject to Cost or Price Analysis to verify compliance with the Contract, applicable laws and regulations.
  4. The termination of this Contract shall in no way relieve the Contractor from any of its obligations under this Contract nor limit the rights and remedies of the County hereunder in any manner.

C. Termination for Non-Appropriation

If expected or actual funding is withdrawn, reduced or limited in any way prior to the termination date set forth in this Contract or in any amendment hereto, the County may, upon written notice to the Contractor, terminate this Contract in whole or in part.

In accordance with King County Code 4.04.040B.6, payment shall not exceed the appropriation for the year in which termination is effected. If the Contract is terminated for non-appropriation:

1. The County shall be liable only for payment in accordance with the terms of this Contract for Services rendered prior to the effective date of termination; and,
2. The Contractor shall be released from any obligation under this contract or a related Purchase Order to Provide further Work pursuant to the Contract as are affected by the termination.

Funding under this Contract beyond the current appropriation year is conditional upon the appropriation by the County Council of sufficient funds to support the activities described in this Contract. Should such an appropriation not be approved, the Contract shall terminate at the close of the current appropriation year. The appropriation year ends on December 31 of each year.

### **3-5 Force Majeure**

The term "force majeure" shall include, without limitation by the following enumeration: acts of nature, acts of civil or military authorities, fire, accidents, shutdowns for purpose of emergency repairs, industrial, civil or public disturbances, causing the inability to perform the requirements of this Contract. If any party is rendered unable, wholly or in part, by a force majeure event or any other cause not within such party's control, to perform or comply with any obligation or condition of this Contract, upon giving notice and reasonably full particulars to the other party, such obligation or condition shall be suspended only for the time and to the extent commercially practicable to restore normal operations. In the event the Contractor ceases to be excused pursuant to this provision, then the County shall be entitled to exercise any remedies otherwise provided for in this Contract, including Termination for Default.

### **3-6 Taxes, Licenses, and Certificate Requirements**

This Contract and any of the Work Provided hereunder is contingent and expressly conditioned upon the ability of the Contractor to provide the specified goods or Services consistent with applicable federal, state or local laws and regulations. If, for any reason, the Contractor's required licenses or certificates are terminated, suspended, revoked or in any manner modified from their status at the time

this Contract becomes effective, the Contractor shall notify the County immediately of such condition in writing.

The Contractor and subcontractor(s) shall maintain and be liable for all taxes (except sales/use taxes), fees, licenses permits and costs as may be required by applicable federal, state or local laws and regulations as may be required to provide the Work under this Contract.

### **3-7 Assignment**

Neither party shall assign any interest, obligation or benefit under or in this Contract or transfer any interest in the same, whether by assignment or novation, without prior written consent of the other party. If assignment is approved, this Contract shall be binding upon and inure to the benefit of the successors of the assigning party. This provision shall not prevent Contractor from pledging any proceeds from this Contract as security to a lender so long as King County Policy Fin10-1 (AP), paragraph 6.1.3 is followed. An assignment shall be accepted by either party upon the posting of all required bonds, securities and the like by the assignee, and the written agreement by assignee to assume and be responsible for the obligations and liabilities of the Contract, known and unknown, and applicable law.

### **3-8 Indemnification and Hold Harmless**

- A. In providing services under this Contract, the Contractor is an independent contractor, and neither the Contractor nor its officers, agents or employees are employees of the County for any purpose. The Contractor shall be responsible for all federal and/or state tax, industrial insurance and Social Security liability that may result from the performance of and compensation for these services and shall make no claim of career service or civil service rights which may accrue to a County employee under state or local law.

The County assumes no responsibility for the payment of any compensation, wages, benefits, or taxes by or on behalf of the Contractor, its employees and/or others by reason of this Contract. The Contractor shall protect, indemnify, defend and save harmless the County and its officers, agents and employees from and against any and all claims, costs, and/or losses whatsoever occurring or resulting from (1) the Contractor's failure to pay any such compensation, wages, benefits or taxes; and/or (2) the supplying to the Contractor work, services, materials, and/or supplies by Contractor employees or other suppliers in connection with or in support of the performance of this Contract.

- B. The Contractor further agrees that it is financially responsible for and will repay the County all indicated amounts following an audit exception which occurs due to the negligence, intentional act and/or failure for any reason to comply with the terms of this Contract by the Contractor, its officers, employees, agents, and/or representatives. This duty to repay shall not be diminished or extinguished by the prior termination of the Contract pursuant to the Duration of Contract, or the Termination section.

- C. The Contractor shall protect, defend, indemnify, and save harmless the County, [and the State of Washington or US Government (when any funds for this Contract are provided by them )], their officers, employees, and agents from any and all costs, fees (including attorney fees), claims, actions, lawsuits, judgments, awards of damages or liability of any kind, arising out of or in any way resulting from the negligent acts or omissions of the Contractor, its officers, employees, subcontractors of any tier and/or agents. The Contractor agrees that its obligations under this paragraph extend to any claim, demand, and/or cause of action brought by or on behalf of any of its employees, subcontractors of any tier or agents.

In addition to injuries to persons and damage to property, the term "claims," for purposes of this paragraph C, shall include, but not be limited to, assertions that the use or transfer of any software, book, document, report, film, tape, or sound reproduction or material of any kind,

delivered hereunder, constitutes an infringement of any copyright, patent, trademark, trade name, and/or otherwise results in unfair trade practice.

- D. For purposes of paragraphs A and C above, the Contractor, by mutual negotiation, hereby waives, as respects the County only, any immunity that would otherwise be available against such claims under the Industrial Insurance provisions of Title 51 RCW.
- E. In the event the County incurs attorney fees and/or costs in the defense of claims within the scope of paragraphs A and C above, such attorney fees and costs shall be recoverable from the Contractor. In addition King County shall be entitled to recover from the Contractor its attorney fees, and costs incurred to enforce the provisions of this section.
- F. The indemnification, protection, defense and save harmless obligations contained herein shall survive the expiration, abandonment or termination of this Contract.
- G. Nothing contained within this provision shall affect and/or alter the application of any other provision contained within this Contract.

### **3-9 Applicable Law and Forum**

Except as hereinafter specifically provided, this Contract shall be governed by and construed according to the laws of the State of Washington, including, but not limited to, the Uniform Commercial Code, Title 62A RCW. Any claim or suit concerning this Contract may only be filed in either the King County Superior Court or U.S. District for the Western District of Washington, in Seattle.

### **3-10 Conflicts of Interest and Non-Competitive Practices**

#### **A. Conflict of Interest**

By entering into this Contract to perform Work, the Contractor represents that it has no direct or indirect pecuniary or proprietary interest, and that it shall not acquire any interest that conflicts in any manner or degree with the Work required to be performed under this Contract. The Contractor shall not employ any Person or agent having any conflict of interest. In the event that the Contractor or its agents, employees or representatives hereafter acquires such a conflict of interest, it shall immediately disclose such conflict to the County. The County shall require that the Contractor take immediate action to eliminate the conflict up to and including termination for default.

#### **B. Contingent Fees and Gratuities**

By entering into this Contract to perform Work, the Contractor represents that:

1. No Persons except as designated by Contractor shall be employed or retained to solicit or secure this Contract with an agreement or understanding that a commission, percentage, brokerage, or contingent fee would be paid; and
2. No gratuities, in the form of entertainment, gifts or otherwise, were offered or given by the Contractor or any of its agents, employees or representatives, to any official, member or employee of the County or other governmental agency with a view toward securing this Contract or securing favorable treatment with respect to the awarding or amending, or the making of any determination with respect to the performance of this Contract.

### **3-11 Disputes, Claims and Appeals**

The Contractor shall address questions or claims regarding the Contract in writing to the Buyer and Project Manager, within ten (10) Days of the date in which the Contractor knows or should know of the question or claim. No claim by the Contractor shall be allowed if asserted after final payment under this Contract. No claim shall be allowed for any costs incurred more than ten (10) Days before the

Contractor gives written notice, as required in this section. The Buyer and Project Manager shall ordinarily respond to the Contractor in writing with a decision, but absent such written response, the question or claim shall be deemed denied upon the tenth (10th) Day following receipt by the Buyer and Project Manager.

In the event the Contractor disagrees with the determination of the Buyer and Project Manager, the Contractor shall, within five (5) Days of the date of such determination, appeal the determination in writing to the Procurement and Contract Services Section Manager. Such written notice of appeal shall include all information necessary to substantiate the appeal. The Procurement and Contract Services Section Manager shall review the appeal and make a determination in writing, which shall be final. Appeal to the Procurement and Contract Services Section Manager shall be a condition precedent alternative dispute resolution or litigation.

Pending final decision of a dispute hereunder, the Contractor shall proceed diligently with the performance of the Contract and in accordance with the direction of the Buyer or Project Manager. Failure to comply precisely with the time deadlines under this subsection as to any claim shall operate as a waiver and release of that claim and an acknowledgment of prejudice to the County.

### **3-12 Mediation and Arbitration**

Nothing in this subsection precludes any party from seeking relief from King County Superior Court or the U.S. District Court for the Western District of Washington, in Seattle. If a dispute arises out of or relates to this Contract, or the breach thereof, and if said dispute cannot be settled through direct discussions, the parties agree to first endeavor to settle the dispute in an amicable manner by mediation. Thereafter, any unresolved controversy or claim arising out of or relating to this Contract, or breach thereof, may be resolved by arbitration, and judgment upon the award rendered by the arbitrator may be entered in either King County Superior Court or the U.S. District Court for the Western District of Washington, in Seattle.

### **3-13 Retention of Records, Audit Access and Proof of Compliance with Contract**

#### **A. Retention of Records**

The Contractor and its subcontractors shall maintain books, records and documents of its performance under this Contract in accordance with generally accepted accounting principles. The Contractor shall retain for six (6) years after the date of final payment under the Contract all financial information, data and records for all Work.

#### **B. Audit Access**

1. Federal, state or County auditors shall have access to Contractor's and its Subcontractors' records for the purpose of inspection, Cost or Price Analysis, audit or other reasonable purposes related to this Contract. Federal, state or County auditors shall have access to records and be able to copy such records during the Contractor's normal business hours. The Contractor shall Provide proper facilities for such access, inspection and copying.
2. Audits may be conducted during or after the Contract period for purposes of evaluating claims by or payments to the Contractor and for any other reason deemed appropriate and necessary by the County. Audits shall be conducted in accordance with generally accepted auditing principles and/or federal, state or County audit procedures, laws or regulations. The Contractor shall fully cooperate with the auditor(s).
3. If an audit is commenced more than sixty (60) Days after the date of final payment for Contract Work, the County shall give reasonable notice to the Contractor of the date on which the audit shall begin.

C. Proof of Compliance with Contract

The Contractor shall, upon request, Provide the County with satisfactory documentation of the Contractor's compliance with the Contract.

In addition, the Contractor shall permit the County, and if federally funded, the FTA and the Comptroller General of the United States, or a duly authorized representative, to inspect all Work, materials, payrolls and other data and records involving the Contract.

**3-14 Other Public Agency Orders**

Other federal, state, county and local entities may utilize the terms and conditions established by this Contract. The County does not accept any responsibility or involvement in the purchase orders or contracts issued by other public agencies.

**3-15 Recycled Products Policy**

The County promotes the purchase and utilization of recycled material and products where available. Recycled material means material and byproducts, which have been recovered or diverted from solid waste disposal for the purpose of recycling. It does not include those materials and byproducts generated from, and commonly reused within, an original manufacturing process. In the event of similar pricing, availability and other factors affecting the solicitation, preference may be given to products containing recycled material.

Ref: KCC 10.14

**3-16 Conflicts of Interest - Current and Former Employers**

The County seeks to eliminate and avoid actual or perceived conflicts of interest and unethical conduct by current and former County employees in transactions with the County. Consistent with this policy, no current or former County employee may contract with, influence, advocate, advise, or consult with a third party about a County transaction, or assist with the preparation of Proposals submitted to the County while employed by the County or within one (1) year after leaving the County's employment, if he/she participated in determining the Work to be done or process to be followed while a County employee.

All Bidders, vendors or Contractors who anticipate contracting with the County shall identify at the time of offer, such current or former County employees involved in preparation of bids or the anticipated performance of the Work if awarded the Contract. Failure to identify former County employees involved in this transaction may result in the County's denying or terminating this Contract. In addition, after award, the Contractor is responsible for notifying the County's Project Manager of current or former County employees who may become involved in the Contract any time during the term of the Contract

Ref: KCC 3.04.015C; 3.04.035B; 3.04.035D; 3.04.035E; 3.04035H1; 3.04.035H2.

**3-17 Nondiscrimination and Equal Employment Opportunity**

A. Nondiscrimination in Employment and Provision of Services.

During the performance of this Contract, neither the Contractor nor any party subcontracting under the authority of this Contract shall discriminate nor tolerate harassment on the basis of race, color, sex, religion, nationality, creed, marital status, sexual orientation, age, or the presence of any sensory, mental, or physical disability in the employment or application for employment or in the administration or delivery of services or any other benefits under this Contract. King County Code Chapter 12.16 is incorporated herein by reference, and such requirements shall apply to this Contract.

**B. Nondiscrimination in Subcontracting Practices.**

During the solicitation, award and term of this Contract, the Contractor shall not create barriers to open and fair opportunities to participate in County contracts or to obtain or compete for contracts and subcontracts as sources of supplies, equipment, construction and services. In considering offers from and doing business with subcontractors and suppliers, the Contractor shall not discriminate against any person on the basis of race, color, creed, religion, sex, age, nationality, marital status, sexual orientation or the presence of any mental or physical disability in an otherwise qualified disabled person.

**C. Compliance with Laws and Regulations.**

The Contractor shall comply fully with all applicable federal, state, and local laws, ordinances, executive orders, and regulations that prohibit discrimination.

Unfair Employment Practices. King County Code Chapter 12.18 is incorporated by reference as if fully set forth herein and such requirements apply to this Contract.

**D. Record-keeping Requirements and Site Visits.**

The County may, at any time, visit the project site, Contractors' and Subcontractors' offices to review records related to the solicitation, utilization, and payment to subcontractors and suppliers in compliance with Executive Order 11246 as amended by Executive Order 11375. This provision includes compliance with any other requirements of this Section. The Contractor shall provide all reasonable assistance requested by King County during such visits. The Contractor shall maintain, for six (6) years after completion of all work under this Contract, the following:

1. Records, including written quotes, bids, estimates or proposals submitted to the Contractor by all businesses seeking to participate on this Contract, and any other information necessary to document the actual use of and payment to subcontractors and suppliers in this Contract.
2. The Contractor shall make the foregoing records available to King County for inspection and copying upon request. Any violation of the mandatory requirements of the provisions of this subsection shall be a material breach of contract, which may result in termination of this Contract or such other remedy as the County deems appropriate, including but not limited to damages or withholding payment.

**E. Discrimination In Contracting**

King County Code Chapter 12.17 is incorporated by reference as if fully set forth herein and such requirements apply to this Contract. During the performance of this Contract, neither Contractor nor any party subcontracting under the authority of this Contract shall discriminate or engage in unfair contracting practices prohibited by KCC 12.17.

**3-18 Severability**

Whenever possible, each provision of this Contract shall be interpreted to be effective and valid under applicable law. If any provision is found to be invalid, illegal or unenforceable, then such provision or portion thereof shall be modified to the extent necessary to render it legal, valid and enforceable and have the intent and economic effect as close as possible to the invalid, illegal and unenforceable provision.

**3-19 Nonwaiver of Breach**

No action or failure to act by the County shall constitute a waiver of any right or duty afforded to the County under the Contract; nor shall any such action or failure to act by the County constitute an approval of, or acquiescence in, any breach hereunder, except as may be specifically stated by the County in writing.

### **3-20 Non-Discrimination in Benefits to employees with Domestic Partners**

King County's Equal Benefits (EB) Ordinance 14823 states that to be eligible for award of contracts at a cost of \$25,000.00 or more, firms must not discriminate in the provisions of employee benefits between employees with spouses, and employees with domestic partners. The successful Contractor, bidder or proposer shall be required to complete a Worksheet and Declaration form. Compliance with Ordinance 14823 is a mandatory condition for execution of a contract. The EB Compliance forms, and Ordinance 14823 are available online at: <http://metrokc.gov/procurement/forms/eb.aspx>.



## **SECTION 4 - SPECIFIC CONTRACTUAL TERMS & CONDITIONS**

### **4-1 Type of Contract**

This ITB may result in the award of one Contract for a Pump and related spare parts. King County Will issue standard purchase orders to the Contractor citing item number, description, deliver terms and Contract price. The standard purchase orders Will be the authorization for the Contractor to deliver the goods as directed. The County is intending to purchase a single Pump, but reserves the right to purchase additional pumps and or spare parts during the Contract Term.

### **4-2 Contract Term**

The term of this Contract shall include time to cover:

- 1) Delivery of the pump and spare parts
- 2) Installation support (per Scope of Work Section 11320 -3.02)  
(installation is arranged by the County with a construction contractor)
- 3) Training (per Scope of Work Section 11320 -3.03)
- 4) Warranty (per Scope of Work Section 11320 -3.04)

The Contract is subject to the termination provisions at Subsection 3-4 or as described in the Scope of Work. The maximum term for this Contract, consisting of the base period plus extensions, is five (5) years unless extended by written agreement signed by all parties.

### **4-3 Contract Value**

The estimated annual value of the pump and spare parts is within \$60,000 to \$90,000. King County Will not be limited, restricted or bound by this dollar value, nor Shall the County be obligated to purchase any items contained in this Contract.

### **4-4 Payment Procedures**

#### **A. Invoices**

The Contractor for Work Accepted by the County shall furnish invoices to:

#### **King County Wastewater**

King Street Center

Joe Fernandes

M/S KSC-NR-0507

201 2<sup>nd</sup> Ave.]

Seattle, WA 98104-1598

**Important** –All invoices shall include the following information: purchase order number, requester's name and phone number, date of invoice, invoice number and invoice total. For each item in the Contract provide the: item number, quantity, description, contract price.

**Failure To Comply With These Requirements Or To Provide An Invoice In Conformance With The Contract May Delay Payment.**

#### **B. Payments**

Within thirty (30) Days after receipt of an invoice, the County shall pay the Contractor for accepted Work, upon acceptance of payment Contractor waives any claims for the Work covered by the Invoice.

If the Contractor is registered with the State of Washington it shall add all applicable State sales/use taxes to each invoice and upon receipt of the payment promptly remit appropriate amounts to Washington, or the County will make payment directly to the State.

C. Subcontractor Prompt Payment

The Contractor agrees to pay each Subcontractor under this Contract for satisfactory performance of its subcontract no later than ten (10) Days from the receipt of each payment the Contractor receives from the County.

**4-5 Advance Payment Prohibited**

No advance payment shall be made for the Work furnished by Contractor pursuant to this Contract.

**4-6 Purchase Orders**

Purchase orders shall be issued referencing this Contract number. Purchase order(s) shall define and authorize the Work by the Contractor based on the prices contained in the bid. The purchase orders issued by the County may reflect agreed to modification of Contract terms, funding or other matters subject to subsection 3-2, Contract Changes.

**4-7 Pricing**

Prices Shall remain firm for the duration of Contract.

**4-8 Shipping Charges**

All prices shall include freight FOB to the designated delivery point in Section 4-9. The County shall reject requests for additional compensation for freight charges.

**4-9 Delivery Points**

This Contract requires all goods and supervision necessary to furnish the goods as set forth herein to:

King County Wastewater  
South Treatment Plant  
1200 Monster Rd.  
Santler Building  
Renton, WA 98055.

**4-10 Warranty Provisions**

A. No Waiver of Warranties and Contract Rights.

Conducting of tests and inspections, review of Scope of Work or plans, payment for a Work, or Acceptance or Final Acceptance of the Work by the County shall not constitute a waiver of any rights under this Contract or in law. The termination of this Contract shall in no way relieve the Contractor from its warranty/guarantee responsibility.

B. Warranty Term.

(See Warranty in Section 6 Scope of Work – Section 11060-1.02 D and Section 11320 – 3.04).

C. Warranty Applicable to Third Party Suppliers, Vendors, Distributors and Subcontractors.

The Contractor shall ensure that the warranty requirements of this Contract are enforceable through and against the Contractor's suppliers, vendors, distributors and Subcontractors. The Contractor is responsible for liability and expense caused by any inconsistencies or differences between the warranties extended to the County by the Contractor and those extended to the Contractor by its suppliers, vendors, distributors and Subcontractors. Such inconsistency or difference shall not excuse the Contractor's full compliance with its obligations under this Contract. The Contractor shall cooperate with the County in facilitating warranty related Work by such suppliers, vendors, distributors and Subcontractors.

#### **4-11 Warranty Remedies**

If at any time during the Warranty Term immediately following Acceptance of any Work covered by this Contract, Contractor or the County discovers one or more material defects or errors in the Work or any other aspect in which the Work materially fails to meet the provisions of the warranty requirements herein Contractor shall, at its own expense and within thirty (30) Days of notification of the defect by the County, correct the defect, error or nonconformity.

Notice Required. The County shall give written notice of any defect to the Contractor. If the Contractor has not corrected defect with thirty (30) Days after receiving the written notice, the County, in its sole discretion, may correct the defect itself. In the case of an emergency where the County believes delay could cause serious injury, loss or damage, the County may waive the written notice and correct the defect. In either case, the County shall charge-back the cost for such warranty repair to the Contractor.

The Contractor is responsible for all costs of repair or replacement in order to restore the Work to the applicable Contract requirements or Scope of Work, including shipping charges, for Work found defective within the warranty period, regardless of who actually corrects the defect.

#### **4-12 Defective Work**

Prior to Final Acceptance, when and as often as the County determines that the Work, furnished under the Contract is not fully and completely in accordance with any requirement of the Contract, it may give notice and description of such non-compliance to the Contractor. Within seven (7) Days of receiving such written notification, the Contractor shall supply the County with a detailed, written plan which indicates the time and methods needed to bring the Work in compliance with the Contract. The County may reject or accept this plan at its discretion. If the County rejects the plan the Contractor may be determined to be in material default of the Contract. This procedure to remedy defects is not intended to limit or preclude any other remedies available to the County by law, including those available under the Uniform Commercial Code, Title 62A RCW.

#### **4-13 Independent Status of Contractor**

In the performance of this Contract, the parties shall be acting in their individual, corporate or governmental capacities and not as agents, employees, partners, joint ventures, or associates of one another. The parties intend that an independent contractor relationship shall be created by this Contract. The employees or agents of one party shall not be deemed or construed to be the employees or agents of the other party for any purpose whatsoever. Contractor shall not make any claim of right, privilege or benefit, which would accrue, to an employee under chapter 41.06 RCW or Title 51 RCW.

#### **4-14 Nondisclosure of Data**

Data provided by the County either before or after Contract award shall only be used for its intended purpose. Contractors and Subcontractors shall not utilize nor distribute the County data in any form without the express written approval of the County.

#### **4-15 Non-Disclosure Obligation**

While performing the Work under this Contract, the Contractor may encounter personal information, licensed technology, Software, Documentation, drawings, schematics, manuals, data and other materials described as "Confidential", "Proprietary" or "Business Secret". The Contractor shall not disclose or publish the information and material received or used in performance of this Contract. This obligation is perpetual. The Contract imposes no obligation upon the Contractor with respect to confidential information which the Contractor can establish that: a) was in the possession of, or was rightfully known by the Contractor without an obligation to maintain its confidentiality prior to receipt from the County or a third (3rd) party; b) is or becomes generally known to the public without violation of this Contract; c) is obtained by the Contractor in good faith from a third (3rd) party having the right to disclose it without an obligation of confidentiality; or, d) is independently developed by the Contractor without the participation of individuals who have had access to the County's or the third (3rd) party's

confidential information. If the Contractor is required by law to disclose confidential information the Contractor shall notify the County of such requirement prior to disclosure.

#### **4-16 Public Disclosure Requests**

Contracts shall be considered public documents and, with exceptions Provided under public disclosure laws, shall be available for inspection and copying by the public.

If a Contractor considers any portion of the Work, including Software, data and related materials, delivered to the County to be protected under the law, the Contractor shall clearly identify each such item with words such as "**Confidential**," "**Proprietary**" or "**Business Secret**." If a request is made for disclosure of such item, the County shall determine whether the material should be made available under the law. If the material or parts thereof are determined by the County to be exempt from public disclosure, the County shall not release the exempted documents. If the material is not exempt from public disclosure law, the County shall notify the Contractor of the request and allow the Contractor ten (10) Days to take whatever action it deems necessary to protect its interests. If the Contractor fails or neglects to take such action within said period, the County shall release the item deemed subject to disclosure. By signing this Contract, the Contractor assents to the procedure outlined in this subsection and shall have no claim against the County on account of actions taken under such procedure.

#### **4-17 Pricing of Spare Parts**

The County shall have the right to conduct a Price Analysis on specific spare parts if pricing appears to be in excess of standard industry pricing for similar parts. Any differences shall be subject to negotiations to the satisfaction of the County. The County is not required to purchase spare parts under this contract if it can purchase the same item(s) from another source under terms that are more advantageous to the County.

#### **4-18 No Prototype Components**

All hardware, Software and Work, shall be in production and be used by customers comparable to the County at the time of the Contract effective date. A sufficient inventory of the Work shall be available to meet delivery requirements.

#### **4-19 Hazardous Chemical Communication**

In order to comply with WAC 296-62-054, Hazard Communication, the Contractor shall prepare, a Material Safety Data Sheet (MSDS) for all products containing any toxic products that may be harmful to the end user. The MSDS Sheet is to accompany the toxic product(s) to the specified delivery sites.

Include the following information in the MSDS:

Chemical Abstract Service (CAS) numbers for every chemical that is listed in the MSDS.

If the product is actually used diluted, the rate should be so stated in the MSDS and the hazards and corresponding Personal protection, etc. also be listed.

SARA Title 3 chemicals shall be listed with the percentage by weight of the total product.

A statement as to the intended use of the product.

#### **4-20 Industrial and Hazardous Waste**

The Contractor shall comply with all applicable local ordinances, state and federal statutes, and supporting rules and regulations governing the discharge of industrial waste to a public sewer, private sewer, or side sewer tributary to the metropolitan sewerage system.

Contractor shall handle and dispose of all hazardous wastes in compliance with all applicable local, state and federal laws and regulations, including the Resource Conservation and Recovery Act, the Washington Hazardous Waste Management Act, and applicable rules and regulations of the

Environmental Protection Agency and the Department of Ecology governing the generation, storage, treatment, transportation or disposal of hazardous wastes.

#### **4-21 Prohibition on Asbestos-Containing Products**

Asbestos-containing products shall not be Provided to the County under this Contract, unless no practicable alternative for the asbestos-containing product exists and the Contractor obtains the written consent of the County. The Contractor shall notify the County in writing at least sixty (60) Days before it plans to supply the County with an asbestos-containing product. The County shall respond to such notification within thirty (30) Days of receipt. The Contractor shall comply with applicable state, federal and local labeling and other laws, regulations and ordinances pertaining to asbestos-containing products, including, but not limited to, the State of Washington Industrial Safety and Health Act and the federal Occupational Safety and Health Act.

#### **4-22 Patents and Royalties**

The Contractor is responsible for paying all license fees, royalties or the costs of defending claims for the infringement of any intellectual property that may be used in performing this Contract. Before final payment is made on this Contract, the Contractor shall, if requested by the County, furnish acceptable proof of a proper release from all such fees or claims.

#### **4-23 Changed Requirements**

New Federal, State and County laws, regulations, ordinances, policies and administrative practices may be established after the date this Contract is established and may apply to this Contract. To achieve compliance with changing requirements, the Contractor agrees to accept all changed requirements that apply to this Contract and require Subcontractors to comply with revised requirements as well. Changed requirements shall be implemented through subsection 3-2, Contract changes.

#### **4-24 Patents, Copyrights and Rights in Data**

Any patentable result or materials suitable for copyright arising out of this Contract shall be owned and retained by the County. The County in its sole discretion shall determine whether it is in the public's interest to release or make available any patent or copyright.

The Contractor agrees that the ownership of any plans, drawing, designs, Scope of Work, computer programs, technical reports, operating manuals, calculations, notes and other Work submitted or which is specified to be delivered under this Contract, whether or not complete (referred to in this subsection as "Subject Data") shall be vested in the County.

All such Subject Data furnished by the Contractor pursuant to this Contract, other than documents exclusively for internal use by the County, shall carry such notations on the front cover or a title page (or in such case of maps, in the name block) as may be requested by the County. The Contractor shall also place its endorsement on all Contractor-furnished Subject Data. All such identification details shall be subject to approval by the County prior to printing.

The Contractor shall ensure that the substance of foregoing subsections are included in each subcontract for the Work under this Contract.

## SECTION 5 - INSURANCE REQUIREMENTS

### 5-1 Evidence and Cancellation of Insurance

Prior to execution of the Contract, the Contractor shall file with the County evidence of insurance and endorsements from the insurer(s) certifying to the coverage of all insurance required herein. All evidence of insurance shall be certified by a properly authorized officer, agent, general agent or qualified representative of the insurer(s) and shall certify the name of the insured, the type and amount of insurance, the location and operations to which the insurance applies, the expiration date, and that the County received notice at least 45 Days prior to the effective date of any cancellation, lapse or material change in the policy.

The Contractor shall, upon demand of the County, deliver to the County all such policy of insurance, and all endorsements and riders, and the receipts for payment of premiums thereon.

Failure to Provide such insurance in a timeframe acceptable to the County shall enable the County to suspend or terminate the Contractor's Work hereunder in accordance with Contract provisions regarding "Termination for Convenience/ Default/Non-appropriation." Suspension or termination of this Contract shall not relieve the Contractor from its insurance obligations hereunder.

### 5-2 Insurance Requirements

- A. The Contractor shall obtain and maintain the minimum insurance set forth below.

By requiring such minimum insurance, the County shall not be deemed or construed to have assessed the risks that may be applicable to the Contractor under this Contract. The Contractor shall assess its own risks and, if it deems appropriate and/or prudent, maintain greater limits and/or broader coverage.

Nothing contained within these insurance requirements shall be deemed to limit the scope, application and/or limits of the coverage afforded, which coverage shall apply to each insured to the full extent Provided by the terms and conditions of the policy(s). Nothing contained with this provision shall affect and/or alter the application of any other provision contained with this Contract.

For all coverages:

Each insurance policy shall be written on an "occurrence" form; excepting that insurance for professional liability, Errors and omissions when required, may be acceptable on a "claims made" form.

If coverage is approved and purchased on a "Claims made" basis, the contractor warrants continuation of coverage, either through policy renewals or the purchase of an extended discovery period, if such extended coverage is available, for not less than three (3) years from the date of completion of the Work which is the subject of this Contract.

- B. Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. General Liability

Insurance Services Office form number (CG 00 01 Ed. 11-88) covering **Commercial General Liability**.

2. Automobile Liability

Insurance Service form number (CA 00 01 Ed. 12-90) covering **Business Auto Coverage**, symbol 1 "any auto"; or the combination of symbols 2, 8 and 9.

3. Professional Liability

Professional Liability, Errors and Omissions coverage.

In the event that Services pursuant to this Contract either directly or indirectly involve or require professional Services, Professional Liability, Errors and Omissions coverage shall be Provided.

4. Workers' Compensation

Workers' Compensation coverage, as required by the Industrial Insurance Act of the State of Washington, as well as any similar coverage required for this Work by applicable federal or "Other States" State Law.

5. Employers Liability or "Stop Gap":

The protection Provided by the Workers Compensation Policy Part 2 (Employers Liability) or, in states with monopolistic state funds, the protection Provided by the "Stop Gap" endorsement to the General Liability policy.

C. Minimum Limits of Insurance

The Contractor shall maintain limits no less than, for:

1. General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, Personal injury and property damage, and for those policies with aggregate limits, a \$2,000,000 aggregate limit.
2. Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage.
3. Professional Liability, Errors and Omissions: \$1,000,000 per Claim and in Aggregate.
4. Workers' Compensation: Statutory requirements of the state of residency.
5. Employers Liability Stop Gap: \$1,000,000.

D. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions shall be declared to, and approved by, the County. The deductible and/or self-insured retention of the policies shall not limit or apply to the Contractor's liability to the County and shall be the sole responsibility of the Contractor.

E. Other Insurance Provisions

The insurance policies required in this Contract are to contain, or be endorsed to contain the following provisions:

1. Liability Policies:

- a. The County, its officers, officials, employees and agents are to be covered as additional insureds as respects liability arising out of activities performed by or on behalf of the Contractor in connection with this Contract. Use the above exact language on the Endorsement Form.
- b. To the extent of the Contractor's negligence, the Contractor's insurance coverage shall be primary insurance as respects the County, its officers, officials, employees and agents. Any insurance and/or self-insurance maintained by the County, its officers, officials, employees or agents shall not contribute with the insurance or benefit the contractor in any way.
- c. The Contractor's insurance shall apply separately to each insured against whom a claim is made and/or lawsuit is brought, except with respect to the limits of the insurer's liability.

F. Acceptability of Insurers

Unless otherwise approved by the County:

Insurance is to be placed with insurers with a Bests' rating of no less than A:VIII, or, if not rated with Bests', with minimum surpluses the equivalent of Bests' surplus size VIII.

If at any time one of the foregoing policies shall be or become unsatisfactory to the County, as to form or substance, or if a company issuing any such policy shall be or become unsatisfactory to the County, the Contractor shall, upon notice to that effect from the County, promptly obtain a new policy, and shall submit the same to the County, with the appropriate certificates and endorsements, for approval.

G. Subcontractors

The Contractor shall include all Subcontractors as insureds under its policies, or shall furnish separate certificates of insurance and policy endorsements for each Subcontractor. Insurance coverages Provided by Subcontractors as evidence of compliance with the insurance requirements of this Contract shall be subject to all of the requirements stated herein.

H. Work Site Safety

The Contractor shall have the "right to control" and bear the sole responsibility for the job site conditions, and job site safety. The Contractor shall comply with all applicable Federal, State and Local safety regulations governing the job site, employees and Subcontractors. The Contractor shall be responsible for the Subcontractor's compliance with these provisions.

I. Endorsements

Endorsement must be included with insurance form, i.e. standard industry forms: "2010 111" or "GC 76 80 10 00. **The County requires this Endorsement to complete the Contract.**



## SECTION 6 - TECHNICAL SPECIFICATIONS (SCOPE OF WORK)

### SECTION 11000

#### General Requirements for Equipment

#### PART 1 GENERAL

##### 1.01 Description

A. Scope:

This section specifies general requirements which are applicable to all mechanical equipment. The Manufacturer is responsible for ensuring that all mechanical equipment meets the requirements of this section in addition to the specific requirements of each individual equipment specification section.

##### 1.02 Quality Assurance

A. References:

This section contains references to the documents listed below. They are a part of this section as specified and modified. Where a referenced document cites other standards, such standards are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Invitation to Bid. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, has been discontinued or has been replaced.

Reference	Title
ABMA Std 9	Load Ratings and Fatigue Life for Ball Bearings
ABMA Std 11	Load Ratings and Fatigue Life for Roller Bearings
ANSI B1.1	Unified Screw Threads
ANSI B1.20.1	Pipe Threads, General Purpose (Inch)
ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings, Class 125
ANSI B18.2.1	Square and Hex Bolts and Screws, Including Askew Head Bolts, Hex Cap Screws, and Log Screws
ANSI B18.2.2	Square and Hex Nuts

B. Unit Responsibility:

The Manufacturer shall cause equipment assemblies made up of two or more components to be provided as a working unit by the unit responsibility manufacturer, where specified. The unit responsibility manufacturer shall coordinate selection, coordinate design, and shall provide all mechanical equipment assembly components such that all equipment components furnished under the specification for the equipment assembly, and all equipment components specified elsewhere but referenced in the equipment assembly specification, is compatible and operates reliably and properly to achieve the specified performance requirements.

Unless otherwise specified, the unit responsibility manufacturer shall be the manufacturer of the driven component equipment in the equipment assembly. The unit responsibility manufacturer is designated in the individual equipment specifications found elsewhere in this project manual. Agents' representatives or other entities that are not a direct division of the driven equipment manufacturing corporation shall not be accepted as a substitute for the driven equipment manufacturer in meeting this requirement. The requirement for unit responsibility shall in no way relieve the Manufacturer of his responsibility to the Owner for performance of all systems.

The Manufacturer shall ensure that all equipment assemblies provided for the project are products for which unit responsibility has been accepted by the unit responsibility manufacturer(s), where specified. Where an individual specification requires the Manufacturer to furnish a certificate from a unit responsibility manufacturer, such certificate shall conform to the content, form and style of Form 11000-C at the end of this Section, shall be signed by an officer of the unit responsibility manufacturer's corporation and shall be notarized. No other submittal material will be processed until a Certificate of Unit Responsibility has been received and has been found to be satisfactory. Failure to provide acceptable proof that the unit responsibility requirement has been satisfied will result in withholding approval of progress payments for the subject equipment *even though the equipment may have been installed in the work*.

C. Balance:

Unless specified otherwise, for all machines 10 HP and greater, all rotating elements in motors, pumps, blowers and centrifugal compressors shall be fully assembled, including coupling hubs, before being statically and dynamically balanced. All rotating elements shall be balanced to the following criteria:

$$e = 16 \frac{W}{N}$$

Where:

$e$  = imbalance, ounce-inches, maximum.

$W$  = Weight of the balanced assembly, pounds mass

$N$  = Maximum operational speed, rpm

Where specified, balancing reports, demonstrating compliance with this requirement, shall be submitted as product data.

## **PART 2 PRODUCTS**

### **2.01 Flanges And Pipe Threads**

Flanges on equipment and appurtenances provided under this section shall conform in dimensions and drilling to ANSI B16.1, Class 125. Pipe threads shall conform in dimension and limits of size to ANSI B1.1, coarse thread series, Class 2 fit.

Threaded flanges shall have a standard taper pipe thread conforming to ANSI B1.20.1. Unless otherwise specified, flanges shall be flat faced.

Flange assembly bolts shall be heavy pattern, hexagonal head, carbon steel machine bolts with heavy pattern, hot pressed, hexagonal nuts conforming to ANSI B18.2.1 and B18.2.2. Threads shall be Unified Screw Threads, Standard Coarse Thread Series, Class 2A and 2B, ANSI B1.1.

### **2.02 Bearings**

Unless otherwise specified, equipment bearings shall be oil or grease lubricated, ball or roller type, designed to withstand the stresses of the service specified. Each bearing shall be rated in accordance with the latest revisions of ABMA Methods of Evaluating Load Ratings of Ball and Roller Bearings. Unless otherwise specified, equipment bearings shall have a minimum L-10 rating life of 50,000 hours. The rating life shall be determined using the maximum equipment operating speed.

Grease lubricated bearings, except those specified to be factory sealed and lubricated, shall be fitted with easily accessible grease supply, flush, drain and relief fittings. Extension tubes shall be used when necessary. Grease supply fittings shall be standard hydraulic alemite type.

Oil lubricated bearings shall be equipped with either a pressure lubricating system or a separate oil reservoir type system. Each oil lubrication system shall be of sufficient size to safely absorb the heat energy normally generated in the bearing under a maximum ambient temperature of 60 degrees C and shall be equipped with a filler pipe and an external level indicator gage.

All bearings accessible to touch, and located within 7 feet measured vertically from floor or working level or within 15 inches measured horizontally from stairways, ramps, fixed ladders or other access structures, shall either incorporate bearing housings with sufficient cooling to maintain surface temperature at 65 degrees C or less for continuous operation at bearing rated load and a 50 degrees C ambient temperature or shall be provided with appropriate shielding shall be provided that will prevent inadvertent human contact.

### **2.03 Pump Shaft Seals**

#### **A. Mechanical Seals:**

Where mechanical seals are specified, the seal shall be of a nondestructive (nonfretting) type requiring no wearing sleeve for the shaft. Shafts for pumps specified with mechanical seals shall be furnished with no reduction in size through the seal area. Mechanical seals shall be the split mechanical type, requiring no field assembly, other than assembly around the shaft and insertion into the pump. Metal parts shall be Type 316 or 316L stainless steel. Springs shall be Hastalloy C. Rotary faces shall be ceramic or silicon carbide. Stationary faces shall be ceramic carbon or silicon carbide. Elastomers shall be ethylene propylene or fluorocarbon. Mechanical seals shall be suitable for operation under full vacuum to 200 percent of the maximum specified operating pressure, but in any event not less than 200 psig.

Boxes for mechanical seals on pumps for contaminated water service (sludge, grit, wastewater, scum, reclaimed water, etc.) shall be drilled and tapped for connection of a clean water purge supply.

### **2.05 Couplings**

Unless otherwise specified in the particular equipment sections, equipment with a driver greater than 1/2 HP, and where the input shaft of a driven unit is directly connected to the output shaft of the driver, shall have its two shafts connected by a flexible coupling which can accommodate angular misalignment, parallel misalignment and end float, and which cushions shock loads and dampens torsional vibrations. The flexible member shall consist of a tire with synthetic tension members bonded

together in rubber. The flexible member shall be attached to flanges by means of clamping rings and cap screws, and the flanges shall be attached to the stub shaft by means of taper lock bushings which shall give the equivalent of a shrunk-on fit. There shall be no metal-to-metal contact between the driver and the driven unit. Each coupling shall be sized and provided as recommended by the coupling manufacturer for the specific application, considering horsepower, speed of rotation, and type of service.

Where torque or horsepower capacities of couplings of the foregoing type is exceeded, Thomas-Rex, Falk Steel Flex, or equal, couplings will be acceptable provided they are sized in accordance with the equipment manufacturer's recommendations and sizing data are submitted. They shall be installed in conformance to the coupling manufacturer's instructions.

## **2.06 Guards**

Exposed moving parts shall be provided with guards which meet all applicable OSHA requirements. Guards shall be fabricated of 14-gage steel, 1/2-13-15 expanded metal screen to provide visual inspection of moving parts without removal of the guard. Guards shall be galvanized after fabrication and shall be designed to be readily removable to facilitate maintenance of moving parts. Reinforced holes shall be provided. Lube fittings shall be extended through guards.

## **2.07 Gage Taps, Test Plugs And Gages**

Unless otherwise specified, gage taps shall be provided on the suction and discharge sides of pumps, blowers and compressors. Pressure and vacuum gages shall be provided where specified.

## **2.08 Lubricants**

The Manufacturer shall provide for each item of mechanical equipment a supply of the required lubricant adequate to last through the specified commissioning period. Lubricants shall be of the type recommended by the equipment manufacturer and shall be products of the Owner's current lubricant supplier. The Manufacturer shall limit the various types of lubricants by consolidating them, with the equipment manufacturer's approval, into the least number of different types. Not less than 90 days before the date shown in his construction schedule for starting, testing and adjusting equipment, the Manufacturer shall provide the Owner with three copies of a list showing the required lubricants, after consolidation, for each item of mechanical equipment. The list shall show estimated quantity of lubricant needed for a full year's operation, assuming the equipment will be operating continuously.

## **2.09 Spare Parts**

Spare parts, wherever required by detailed specification sections, shall be stored in accordance with the provisions of this paragraph. Spare parts shall be tagged by project equipment number and identified by part number, equipment manufacturer, and subassembly component (if appropriate). Spare parts subject to deterioration, such as ferrous metal items and electrical components, shall be properly protected by lubricants or desiccants and encapsulated in hermetically sealed plastic wrapping. Spare parts with individual weights less than 50 pounds and dimensions less than 2 feet wide, or 18 inches high, or 3 feet in length shall be stored in a wooden box with a hinged wooden cover and locking hasp. Hinges shall be strap type. The box shall be painted and identified with stenciled lettering stating the name of the equipment, equipment numbers, and the words "spare parts." A neatly typed inventory of spare parts shall be taped to the underside of the cover.

### PART 3--EXECUTION

Installation of equipment accessories included in this section shall be as recommended by the equipment manufacturer unless otherwise specified in the individual equipment specification section.

#### 11000-A. Manufacturer's Installation Certification Form:

Contract No: \_\_\_\_\_ Specification Section: \_\_\_\_\_

Equipment name: \_\_\_\_\_

Contractor: \_\_\_\_\_

Manufacturer of equipment item: \_\_\_\_\_

The undersigned manufacturer of the equipment item described above hereby certifies that he has checked the installation of the equipment and that the equipment, as specified in the project manual, has been provided in accordance with the manufacturer's recommendations, and that the trial operation of the equipment item has been satisfactory.

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Manufacturer

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Signature of Authorized Representative

**11000-B. Manufacturer's Instruction Certification Form:**

Contract No: \_\_\_\_\_ Specification Section: \_\_\_\_\_

Equipment name: \_\_\_\_\_

Contractor: \_\_\_\_\_

Manufacturer of equipment item: \_\_\_\_\_

The undersigned manufacturer certifies that a service engineer has instructed the wastewater treatment plant operating personnel in the proper maintenance and operation of the equipment designated herein.

<b><u>Operations Check List (check appropriate spaces)</u></b>	
Start-up procedure reviewed	
Shutdown procedure reviewed	
Normal operation procedure reviewed	
Others:	

<b><u>Maintenance Check List (check appropriate spaces)</u></b>	
Described normal oil changes (frequency)	
Described special tools required	
Described normal items to be reviewed for wear	
Described preventive maintenance instructions	
Described greasing frequency	
Others:	

\_\_\_\_\_  
Date

\_\_\_\_\_  
Manufacturer

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Signature of Authorized Representative

11000-C. UNIT RESPONSIBILITY CERTIFICATION FORM

(Job Title)

**CERTIFICATE OF UNIT RESPONSIBILITY  
for Specification Section**

\_\_\_\_\_  
(Section title)

***In accordance with paragraph 11000-1.02 C of the contract documents, the undersigned manufacturer accepts unit responsibility for all components of equipment furnished under specification Section \_\_\_\_\_, and for related equipment manufactured under Sections \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.***

*We have reviewed the requirements for Sections 11000 (and 11050 where applicable) and all sections referencing this (these) section(s), including but not limited to drivers, supports for driving and driven equipment and all other specified appurtenances to be furnished by the driven equipment manufacturer. And, we have further reviewed, and modified as necessary, the requirements for associated variable speed drives and motor control centers. We hereby certify that all specified components are compatible and comprise a functional unit suitable for the specified performance and design requirements whether or not the equipment was provided by us. We will make no claim nor establish any condition that problems in operation for the product provided under this specification Section \_\_\_\_\_ are due to incompatibility of any components covered by this certificate of unit responsibility. Nor will we condition or void any warranty for the performance of the product of this specification Section \_\_\_\_\_ due to incompatibility of any components covered under this certificate of unit responsibility.*

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
Name of Corporation

\_\_\_\_\_  
Commission expiration date

\_\_\_\_\_  
Address

Seal:

By: \_\_\_\_\_  
Duly Authorized Official

\_\_\_\_\_  
Legal Title of Official

Date: \_\_\_\_\_

**\*\*End Of Section\*\***

## SECTION 11060

### Electric Motors

#### PART 1--GENERAL

##### 1.01 Description

This section specifies single and three phase, horizontal and vertical, single-speed and two-speed, low-voltage (600 volts and less), energy efficient (900 rpm) and premium efficiency (1200, 1800, and 3600 rpm) alternating current, induction motors, 250 horsepower or less. Standard NEMA MG 1 motors are specified, as modified herein.

This section also specifies IEEE 841 severe-duty, totally enclosed fan-cooled (TEFC Type-2, specified herein) squirrel cage induction motors from 1 to 500 horsepower with voltage ratings of 600V, 2300V, and 4000V. See Custom Motor criteria within the driven equipment specification for voltages above 600V and for high horsepower.

Motors shall be provided in compliance with these specifications. Provide motors suitable for continuous operation under the ambient conditions:

1. Temperature: 50 °F to 90 °F.
2. Altitude: 0 to 3300 feet above sea level.
3. Derate motors for higher ambient temperature and for higher altitude with motor size based on brake-horsepower.

Motors shall have copper rotor material and copper stator windings with F-insulation without exceeding the B-temperature rise of 80-degree C and with Design-B torque / current characteristics rated for continuous operation duty.

Two-speed motors shall be two-winding motors. Two-speed, one-winding consequential-pole motors that require special motor starters are prohibited.

Refer to Motor Types-1, 2, and 3 Classification and Inverter Duty variable torque and constant torque specification requirements herein. Motor Types-1, 2, and 3 have the additional requirements of Inverter Duty Motors as specified or scheduled.

Custom Motors and Special Purpose Motors, with features or ratings that are not specified herein, are specified in the particular equipment specifications. The submittal, installation, and testing requirements for all motors are specified herein.

Custom motors are motors over 250 horsepower, medium voltage (2300 volt, 4000 volt, or higher) for high elevations, high ambient conditions, high thrust, special enclosures, intermittent duty, varying duty, and inverter duty motors that require special cooling for slow speed operation with constant torque loads and motor limited to below base speed operation.

Special purpose motors are submersible motors, integral gear motors, close-coupled pump motors, crane and hoist motors, fire pump motors, brake motors, gate and valve operator motors, and high torque rated motors and other unique application motors that specified with the driven equipment.

Submersible motors used as inverter duty motors shall meet the motor insulation, slow speed cooling, and synthetic output sine wave mitigation requirements of this specification and the driven equipment specification. Submersible motor designs and applications shall comply with NEMA MG 1-30 and NEMA MG 1-31.

Standard, custom, and special purpose motors shall be provided by the manufacturer of the driven equipment under the provisions of Section 11000 Requirements for Equipment Unit Responsibility. The Manufacturer shall assign unit responsibility as specified in Section 11000 to the manufacturer for the equipment specified and a certificate of unit responsibility shall be provided.



## 1.02 Quality Assurance

### A. General:

Motors shall be built in accordance with UL 674, UL 1004, NEMA Standard MG 1, NEMA MG 1, Table 12-10 motors that meet the Energy Policy Act of 1992 (EPA) requirements with full-load efficiency measurements per IEEE Standard 112, Test Method B, and to the requirements specified. IEC Metric Motors and imported EPA Motors that do not meet the NEMA standards are prohibited.

### B. References:

This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids).

If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.

Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ABMA 9	Load Ratings and Fatigue Life for Ball Bearings
ABMA 11	Load Ratings and Fatigue Life for Roller Bearings
IEEE 112	Standard Test Procedures for Polyphase Induction Motors and Generators
IEEE 841	Standard for Petroleum and Chemical Industry-Severe Duty Totally Enclosed Fan-Cooled (TEFC) Squirrel Cage Induction Motors - Up to and Including 500 HP
NEMA ICS 2	Industrial Control and Systems Controllers, Contactors and Overload Relays Rated Not More Than 2000 Volts AC or 750 Volts DC
NEMA 250	Enclosures for Electrical Equipment (1000 volts maximum)
NEMA MG 1	Motors and Generators
NEMA MG1-30	Application Considerations for Constant Speed Motors Used on a Sinusoidal Bus with Harmonic Content and General Purpose Motors Used with Adjustable-Voltage or Adjustable- Frequency Controls or Both. Note: Specifications for Standard TENV Submersible Motors rated 1/2 – 200 HP, 140TY-L360TY Frames, and rated at 200, 230, 460, 575, 600 Volt are available from motor manufactures.
NEMA MG1-31	Definite-Purpose Inverter-Fed Polyphase Motors: Rated 5000 horsepower or less at 7200 volt or less, intended for use with adjustable-voltage and adjustable frequency controls, commonly referred to as inverters.
UL 674	Electric Motors and Generators for Use in Division 1 Hazardous (Classified) Locations
UL 1004	Electric Motors

C. Factory Tests:

The manufacturer's factory motor Prototype Tests per IEEE Standard 112 Appendix-A on motors through 250 horsepower shall be submitted as Product Data for the motor, actual factory tests for motors is not required:

Winding resistance in ohms and converted to 25 degree C.

1. Resistive Unbalance and Quarter Voltage Impedance, as applicable.
2. Locked-Rotor current (Single phase).
3. High Potential.
4. No-Load Excitation (volts, amperes, RPM).
5. Bearing vibration check.
6. Efficiency, Power Factor, Current at 115%, 100%, 75%, 50%, and no load.

The motors larger than 250 horsepower shall be subject to the manufacture's complete factory dynamometer tests per IEEE Standard 112 Appendix-B:

1. Standard routine factory tests.
2. Full Load Heat Run.
3. Temperature Rise at full load.
4. Breakdown Torque.
5. Rated Full Load Slip.
6. Speed-Torque Curves.

D. Warranty:

In addition to the guarantee requirements specified in Section 11320, all motors shall be warranted against defects in materials and workmanship for a period of 5 years under the specified uses and with normal operation and service. This warranty shall be delivered, in writing, to the Owner and shall include, as a minimum, 100 percent full payment coverage for parts and labor during the first 60 months of operation.

**1.03 Submittals**

Submittals shall include the following:

1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Manufacturer, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Project Representative shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Manufacturer with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.
2. **IEEE Standard 841 Date Sheet:** Manufacture completed IEEE Standard 841 Date Sheet for AC Squirrel Cage Induction Motors or Supplier completed "Form 11060-A" at the end of this Section with required factory data of motors supplied.
3. **Speed-Torque curve** per 1.02 C Factory Tests.

4. **Performance curves:** developed for the specific application. Performance curves shall show all operational speed, capacity, pressure, and power for specified conditions.
5. **Factory Test Data:** Including Guaranteed Minimum Efficiency for 115% load, 100% load, 75% load, 50% load, and no load.
6. **Vibration Level:** Guaranteed vibration level when measured per MG 1, Figure 7-6:
  - a. Displacement: 0.0025 inch peak-to-peak
  - b. Velocity: 0.10 inches per second peak
  - c. Acceleration: 1g (gravity) peak.
7. **Motor heating curve** for motors per 1.02 C Factory Tests.
8. **Motor description** Motor outline, dimensions, and weight.
9. **Manufacturer's** descriptive information relative to motor features.
10. **Disassembly** and repair documentation.

#### 1.05 Power Supply Variations

Motors shall operate successfully under running conditions at rated load with +/- 10-percent of rated voltage with rated frequency or +/- 5-percent of rated frequency with rated voltage.

#### 1.06 Nema Winding Temperatures

NEMA MG 1 Table 12-7 motors insulation system maximum winding temperatures in degrees-Centigrade (C), with the degrees-Fahrenheit (F) insulation system class specified herein.

1. Forty degree-C ambient (104 degree-F) is the basis for temperature rise.
2. For 50 degree C ambient (122F) and above, refer to the driven equipment specifications for additional requirements.

Insulation System Class	Degrees C / F	Temperature Rise by Resistance
A	140 / 284	NA
B	165 / 329	B-rise: 40 + 80 = 120 Degrees C / 248 F
F	190 / 374	F-rise: 40 + 105 = 145 Degrees C / 293 F
H	215 / 419	H-rise: 40 + 125 = 165 Degrees C / 329 F

#### 1.07 Nema Motor Temperature Protection Types

Refer to Thermal Protection in Part-2 for thermal device requirements. The NEMA design shall limit the temperatures of the windings without using a thermal device:

1. Type-2: Winding Running Over-temperature Protection.

## Part 2--Products

### 2.01 Acceptable Products

The following manufacturer's motors generally meet the class and performance requirements of this specification when furnished with appropriate modifications and additional features as specified:

#### A. Horizontal Motors:

##### 1. Type 1 – General

Not used

##### 2. Type 2 - Premium efficiency totally enclosed-fan cooled, Chemical Industry severe duty motors manufactured by:

- a. General Electric Inc.: ..... TEFC IEEE 841 Severe duty: X\$D
- b. Reliance Electric Co.: ..... Type IEEE 841 XL Severe Duty.
- c. Siemens: ..... TEFC-RGZESDX, IEEE 841 Severe Duty.
- d. Emerson US Motor: ..... Type CE.

##### 3. Type 3 - Premium efficiency explosion-proof motors manufactured by:

##### 4. Not used

#### B. Vertical Motors:

Not used

#### C. Motor Types 1, 2 Or 3 Rated For Inverter Duty Service:

Not used

### 2.02 General

#### A. Nameplates:

Motor nameplates shall be engraved or stamped stainless steel. Information shall include those items enumerated in NEMA Standard MG 1, as applicable. Nameplates shall be permanently fastened to the motor frame and shall be visibly positioned for inspection.

Additionally, provide the following information on nameplates or additional nameplates for:

- 1. Motors 1/2 horsepower and larger: Indicate the ABMA L-10 rated life for the motor bearings.
- 2. Motors 2 to 50 horsepower: Indicate the NEMA nominal efficiency.
- 3. Motors 50 horsepower and larger: Indicate NEMA guaranteed minimum efficiency.
- 4. Explosion-Proof motors: Indicate UL frame temperature limit code.
- 5. Space heater information.
- 6. NEMA MG 1 Over Temperature Protection Type Number.
- 7. Temperature device rating and alarm and shutdown setpoint information.

#### B. Construction:

All motors provided under this specification shall have the following features of construction:

##### 1. Frames:

- a. Cast iron frames for motors 1/2 horsepower and larger.
- b. Steel frames for motors smaller than 1/2 horsepower.
- c. Aluminum frame motors will not be permitted.

2. Cast metal shrouds and covers for non-sparking fan blades.
3. Non-hygroscopic motor leads.
4. NEMA Design-B as standard design.
5. NEMA Design-A, C, or D shall be identified as custom design features in the driven equipment specifications.
6. Motor Service Factor (percent of additional horsepower):
  - a. SF: 1.15 for Types-1, 2, and 3 Sine-wave motors
  - b. SF: 1.0 for Inverter Duty motors.
  - c. SF dual rating: 1.15 Sine-wave and 1.0 Inverter Duty.
7. Grounding terminal in conduit box.
8. Stainless Steel nameplate.

### **2.03 Motors Less Than 1/2 Horsepower**

Not Used.

### **2.04 Motors 1/2 Horsepower Through 250 Horsepower**

#### **A. General:**

Motors 1/2 horsepower through 250 horsepower shall have copper windings and shall be three phase, squirrel cage, induction type rated for full-voltage start and continuous duty and rated for 460-Vac.

Motors shall have a NEMA MG 1 design for the duty service imposed by the driven equipment such as frequent starting, intermittent overload, high inertia, mounting configuration, or service environment.

#### **B. Rating:**

Motors shall be rated 460 volts, three-phase, 60-Hertz, and shall be continuous time rated in accordance with NEMA Standard MG 1. Refer to the driven equipment specification for custom motors or special purpose motors with voltage rating above 460 volts.

Unless specified otherwise, motors shall have a service factor of 1.15 with additional 15-percent horsepower. Motors shall not be required to exceed the nameplate rating at service factor 1.00.

#### **C. Motor Type Classifications:**

##### **1. General:**

- a. Definition of terms shall be in accordance with NEMA MG 1.

##### **2. Type 2 Motors:**

- a. Enclosure: Totally enclosed, fan cooled (TEFC).
- b. Class F insulation and Class B temperature rise at the motor's nominal rating.
- c. Conform to IEEE 841 Chemical Industry-Severe Duty rating through 500 Horsepower.
- d. Surfaces shall be coated with a corrosion-resistant treatment such as an epoxy paint that passes ASTM B117 for 96-hours.
- e. No load airborne sound power level below 90-dBA per MG 1 Part-9.
- f. Breather/drain fitting instead of solid drain plug.
- g. International Protection Standard IP55 bearing enclosure.

D. Thermal Protection:

Type 1, Type 2 and Type 3 motors that require motor over-temperature protection, as defined in NEMA MG 1-12, with the motor controller interface wiring and devices as indicated on the drawings for the following:

1. Inverter duty motors and totally-enclosed-air-over (TEAO) motors:
  - a. NEMA Type-2 motor over-temperature self-protection: Thermal-overload, self-reset bimetallic Klixon switch for motors 5 horsepower and smaller.
  - b. Motors larger than 5 horsepower require controller alarm / trip:
    - I. Self-powered, motor mounted auxiliary device with Form-C output contacts wired to variable speed or adjustable frequency drive to shut down the motor controller. Both the normally open contact and the normally closed contact shall be available at the motor terminal box.
    - II. Non-self-powered power thermal devices are prohibited.
    - III. Factory set thermal protection device with alarm and trip setpoints indicated on the motor device nameplate.
    - IV. Factory wired to separate motor termination box.
2. Motors 300 horsepower and larger and higher voltage:
  - a. NEMA Type-1 thermal protection: Two-100-ohm platinum RTDs in each winding.
  - b. Resistance Temperature Detectors (RTD) wired to separate motor termination box with wiring diagram provide.
  - c. Provide RTD monitor and transmitter at the motor, as indicated or
  - d. Provide RTD monitor at the motor controller, as indicated.
  - e. Indicated alarm and trip setpoints on the motor device nameplate.
3. Auxiliary equipment shall have normally closed NEMA ICS 2 B300 contacts and shall be housed in NEMA 250 enclosures as follows:
  - a. Type 2 motors .....NEMA 4

E. Inverter Duty Motors: .....Not Used.

F. Vertical Motors: .....Not Used

G. Conduit Boxes:

Conduit boxes shall be sized based on the conduit number and conduit size indicated on the drawings. Provide over-sized boxes with the number of openings as required to accommodate the conduits required. Replace undersized conduit boxes.

Conduit boxes shall be split construction with threaded hubs and shall conform to IEEE 841 for Type 2 and Type 3 motors. Motors shall be furnished with petroleum-resistant gaskets at the base of the conduit box and between the halves of the conduit box

Conduit boxes shall be designed to rotate in order to permit installation in any of four positions 90 degrees apart. Motors shall have grounding lug located within the conduit box for the ground connection.

Provide separate conduit boxes for temperature devices and space heaters

H. Motor Efficiency:

Type-1 and Type-2 motors in accordance with 2002 NEMA MG 1 Table 12-11 and Table 12-12 and Type-2 in accordance with IEEE 841 Table 2 motor minimum nameplate efficiency for energy efficient 900 rpm motors and premium efficiency motor for 1200 rpm, 1800 rpm, and 3600 rpm determined in accordance with IEEE 112B testing procedures, when operating on a sinusoidal power source shall conform to the following:

MG1 Motor Horsepower	Guaranteed Motor Minimum Efficiency (percent)			
	900 rpm	1200 rpm	1800 rpm	3600 rpm
1	70.0	78.5	81.5	74.0
1.5	72.0	81.5	82.5	81.5
2	80.0	81.5	82.5	82.5
3	81.5	86.5	84.0	82.5
5	82.5	86.5	84.0	84.0
7.5	82.5	88.5	88.5	86.5
10	86.5	88.5	88.5	87.5
15	86.5	89.5	89.5	87.5
20	87.5	90.2	91.7	89.5
25	87.5	91.0	91.7	90.2
30	89.5	91.0	91.7	90.2
40	89.5	92.4	92.4	91.0
50	90.2	92.4	92.4	91.7
60	90.2	93.0	93.0	92.4
75	91.7	93.0	93.6	92.4
100	91.7	93.6	94.1	92.4
125	92.4	93.6	94.1	93.0
150	92.4	94.5	94.5	93.0
200	92.4	94.5	94.5	94.1
250	93.6	94.1	94.1	94.1

I. Bearings:

Bearings shall be oil or grease lubricated ball or angle contact roller bearings rated for a minimum L-10 life of 100,000 hours in accordance with ABMA 9 or 11 at the ambient temperature specified. Motor designs employing cartridge type bearings will not be accepted. Bearings shall be fitted with lubricant fill and drain or relief fittings.

J. Lifting Eyes:

Motors weighing more than 50 pounds shall be fitted with at least one lifting eye and motors over 150 pounds shall be fitted with two lifting eyes.

K. Current Imbalance:

Current imbalance between phases shall not exceed the values tabulated below when the motor is operating at any load within its service factor rating and is supplied by a balanced voltage system:

1. 5 horsepower and above: 10 percent

L. Space Heaters:

Not Used.

**2.05 Product Data**

The following product data shall be provided for each motor in accordance with Section 11320.

1. Operating and maintenance information specified in Section 11320
2. Overhaul instructions for each motor 50 horsepower and above.
3. Written warranty specified in paragraph 11060-1.02 D.



## **PART 3--EXECUTION**

### **3.01 Grounding And Bonding**

Verify the circuit ground cable (green) is identified and connected to the grounding lug terminal in the conduit box.

Provide supplementary grounding by installing a bond from the motor frame to the grounding electrode system as indicated on the drawings.

### **3.02 Field Testing**

Verify breather/drain fittings have been installed as specified herein.

Winding insulation resistance for motors shall be not less than 10-megohm measured with a 1000-Vac megohmmeter at 1-minute at or corrected to 40-degree C.

Motor phases current imbalance testing for motors 50 horsepower and larger shall be performed. The Installed Motor Test Form, 16000-B, contained at the end of this Section, shall be completed for each motor after installation and submitted for acceptance. All motors shall have their insulation resistance measured before they are connected. Motors 50 HP and larger shall have their insulation resistance measured at the time of delivery and when they are connected. Insulation resistance values less than 10 megohms are not acceptable. Verify that motors are connected to rotate in the correct direction. Verification may be accomplished by momentarily energizing the motor, provided the Contractor confirms that neither the motor nor the driven equipment will be damaged by reverse operation.

**11060-A. MOTOR DATA FORM:**

Equipment Name \_\_\_\_\_ Equipment No(s) \_\_\_\_\_

Site Location \_\_\_\_\_

**Nameplate Markings**

Mfr		Mfr Model		Frame		HP	
Volts		Phase		RPM		Service factor	
FLA		LRA		Freq		Amb temp rating	°C
Time rating				Design letter			
	(NEMA MG1-10.35)				(NEMA MG-1.16)		
KVA code letter				Insulation class			

The following information is required for explosion proof motors only:

- A. Approved by UL for installation in Class \_\_\_\_\_, Div \_\_\_\_\_
- B. UL frame temperature code \_\_\_\_\_; Group \_\_\_\_\_ Atmosphere  
(NEC Tables 500-2 and 500-2(b))

The following information is required for all motors 1/2 horsepower and larger:

- A. Guaranteed minimum efficiency \_\_\_\_\_  
(paragraph 11060-2.04 H)
- B. Nameplate or nominal efficiency \_\_\_\_\_

**Data Not Necessarily Marked on Nameplate**

Type of enclosure		Enclosure material	
Temp rise	degrees C (NEMA MG1-12.41,42)		
Space heater included?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	if Yes: watts volts
Type of motor winding over temperature protection, if specified:			

Use the space below to provide additional information on other motor modifications, if specified:

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**11060-B. INSTALLED MOTOR TEST FORM:**

Contract Name: \_\_\_\_\_

Contract No.: \_\_\_\_\_

Motor Equipment Number \_\_\_\_\_

Date of test \_\_\_\_\_

Equipment Driven \_\_\_\_\_

Ambient temperature \_\_\_\_\_ °F

MCC Location \_\_\_\_\_

**a. Resistance:**

Insulation resistance, phase-to-ground, megohms:

Phase A \_\_\_\_\_ Phase B \_\_\_\_\_ Phase C \_\_\_\_\_

**b. Current at Full Load:**

Phase \_\_\_\_\_ Current, amps \_\_\_\_\_

Phase \_\_\_\_\_ Current, amps \_\_\_\_\_

Phase \_\_\_\_\_ Current, amps \_\_\_\_\_

c. Thermal Overload Device: Manufacturer/catalog # \_\_\_\_\_ Amps \_\_\_\_\_

d. Circuit breaker (MCP) setting: \_\_\_\_\_

**e. Motor Nameplate Markings:**

Mfr \_\_\_\_\_ Mfr type \_\_\_\_\_ Frame \_\_\_\_\_ HP \_\_\_\_\_

Volts \_\_\_\_\_ Phase \_\_\_\_\_ Rpm \_\_\_\_\_ \*\*Service factor \_\_\_\_\_

Amps \_\_\_\_\_ Hz \_\_\_\_\_ Ambient temp rating \_\_\_\_\_ °C

Time rating \_\_\_\_\_ \*\*Design letter \_\_\_\_\_

(NEMA 1-10.35) (NEMA MG-1.16)

Code letter \_\_\_\_\_ Insulation class \_\_\_\_\_

\*\*Required for 3-phase squirrel cage induction motors only.

CERTIFIED \_\_\_\_\_

Signature of Contractor Representative

\_\_\_\_\_

Date

WITNESSED \_\_\_\_\_

Signature of Project Representative

\_\_\_\_\_

Date

**\*\*End Of Section\*\***

## SECTION 11320

### Constant Speed Rotary Lobe Pump

#### PART 1--GENERAL

##### 1.01 Description

A. Scope:

This section specifies the positive displacement rotary lobe type pump, complete with direct drive, electric motor, and all specified appurtenances. Unit responsibility shall be assigned to the Pump Manufacturer for the equipment, as specified in this section.

B. Type:

The pumping unit shall be of the positive displacement, rotor type, specifically designed for pumping wastewater treatment scum, and co-thickened primary and secondary sludges containing organic solids and small inorganic particles. The rotor lobes shall provide generally uniform pulse-free flow, and each rotor shall have no less than three lobes. Rotor configuration shall be per manufacturer's recommendation for the pumping application.

C. Equipment List:

ITEM	EQUIPMENT NUMBER
THSBT Sludge Pre-heat Recirculation Pump	P 232-026
Electric Motor	MTR 232-026

D. Performance And Design Requirements:

Equipment shall be designed and selected for continuous duty pumping of concentrated solids derived from the treatment of wastewater. The pump shall be suitable for exposure to co-thickened scum, primary sludge, and secondary sludge containing grit, small particles of wood, metal, industrial solvents, polymers, greases, detergents, petroleum products, and organic particles. The THSBT sludge is expected to be in the range of 5% to 7% total solids. The pumped fluids are expected to range in temperatures between 50 °F and 100 °F, and the pH may vary between 6 and 9.

The pump, along with associated drive appurtenances, shall be mounted on a common fabricated steel baseplate. The baseplate shall be hot dip galvanized after fabrication.

E. Operating Requirements:

The pump provided under this specification shall be designed for the following operating requirements. The minimum theoretical pump displacement per 100 rpm shall not be less than 400 gpm for a three lobe pump and not less than 375 gpm for a four lobe pump when operating with new lobes and wear plates. The process and service water in the plant is typically used to flush out equipment and piping. The process water reaches pressures around 110 psi, therefore the equipment and appurtenances shall be able to withstand a minimum washout pressure of 120 psi without causing damage to the equipment or appurtenances. The provision of suitable stainless steel pressure reducing valves shall be required to protect those equipment components which cannot withstand the 120 psi washout pressure.

Equipment	Design Flow (gpm)	Total Solid (%)	Discharge Pressure (i)	Temperature (°F)	Maximum Motor HP	Maximum Pump Speed (ii)
P 232-026	1000	5-7	90 psi	50-100	100	300 rpm

- i. Specified discharge pressure is for continuous operation.
- ii. The maximum pump speed is the maximum allowable pump speed to meet the flow and discharge pressure specified in this paragraph with new lobes and wear plates.

## 1.02 References

This section contains references to the following documents. They are a part of this section as specified and modified. In case of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Reference	Title
ASTM A470	Vacuum-Treated Carbon and Alloy Steel Forgings for Turbine Rotors and Shafts
ASTM A536	Cast Iron Castings
AGMA 6010	Standard for Spur, Helical, Herringbone, Straight Bevel, or Spiral Bevel Gears
AGMA 6019	Gearmotors Using Spur, Helical, Herringbone, Straight Bevel, or Spiral Bevel Gears

## 1.03 Submittals

Submittals shall include the following:

1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated and, therefore requested by the Pump Manufacturer, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph. The remaining portions of the paragraph not underlined will signify compliance on the part of the Pump Manufacturer with the specifications. The submittal shall be accompanied by a detailed, written justification for each deviation. **Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.**
2. Performance curves developed for the specific application. Performance curves shall show all operational speed, capacity, pressure, and power for specified conditions.
3. Motor submittal data as required under paragraph 11060-1.03.
4. Manufacturer's information for all components, materials list, dimensions, weights, and additional information describing the conformance of the proposed equipment with design and operating requirements of this section.
5. Names and addresses of the manufacturer, the nearest representative of the manufacturer, and the nearest supplier(s) of the manufacturer's equipment and parts.
6. Significant design criteria including pertinent calculations used in designing, selecting, or verifying the suitability of the installed equipment.
7. Wiring diagrams for all electrical and control equipment.

8. Exploded view and plan and section views, or detailed plan and section views of equipment when exploded views are not available. All views shall have detailed part callouts matching those callouts of the parts list. Exploded or cut views of equipment shall be provided, if available, as a standard item of the manufacturer's information.

#### **1.04 Shipment**

##### **A General**

Equipment, products and materials shall be shipped in ways which will prevent damage to the items. Damaged items will not be permitted as part of the work except in cases of minor damage that have been satisfactorily repaired and are acceptable to the Project Representative.

##### **B Equipment**

###### **1. Package And Marking:**

All equipment shall be protected against damage from moisture, dust, handling, or other cause during transport from manufacturer's premises to site. Each item or package shall be marked with the number unique to the specification reference covering the item.

Stiffeners shall be used where necessary to maintain shapes and to give rigidity. Parts of equipment shall be delivered in assembled or subassembled units where possible.

###### **2. Identification:**

Each item of equipment and valve shall have permanently affixed to it a label or tag with its equipment or valve number designated in this contract. Marker shall be of stainless steel. Location of label will be easily visible.

###### **3. Shipping:**

Bearing housings, vents and other types of openings shall be wrapped or otherwise sealed to prevent contamination by grit and dirt.

Damage shall be corrected to conform to the requirements of the contract before the assembly is incorporated into the work. The Manufacturer shall bear the costs arising out of dismantling, inspection, repair and reassembly.

#### **1.05 Environmental Conditions**

The pumps are located indoors, and temperatures may range from 50 °F to 90 °F.

## PART 2--PRODUCTS

### 2.01 Acceptable Products

The Owner believes the following candidate manufacturers are capable of producing equipment and/or products that will satisfy the requirements of this Section. This statement, however, shall not be construed as an endorsement of a particular manufacturer's products, nor shall it be construed that named manufacturers' standard equipment or products will comply with the requirements of this Section. Positive displacement lobe pumps shall be manufactured by Boerger, Vogelsang, or approved equal, modified to provide the specified features and to meet specified operating conditions. All equipment shall be designed and built for 24 hour continuous operation at any and all conditions within the specified range without overheating and without excessive vibration or strain. The pump design shall allow dry operation for up to 30 minutes without damage to the pump or its internals.

### 2.02 Materials

Component	Material
Casting and casing cover plates	Grey cast iron ASTM A536, 230 to 260 Brinell hardness, 700 Brinell on end cover wear plate
Rotors	Grey Cast iron core with Buna-N covering as specified in paragraph 11385- 2.03 A
Shafts	Carbon steel, ASTM A470, minimum shaft diameter of 85mm
Shaft sleeve	Stellite coated stainless steel

### 2.03 Equipment

#### A. Pump:

The pump shall utilize convoluted rotors which are driven through positive timing gears running in oil. Rotors cores shall be covered with a layer of Buna-N Durometer hardness 65-72 or EPDM. Rotor configuration shall be per manufacturer's recommendation for the pumping application. Rotors shall be positioned on the shaft by replaceable hardened key ways or involute splines, and secured to the shaft by internal/external expansion clamp sleeves and flush discs requiring no recesses in the end cover. The pump shall be furnished with three sets of rotors, one set installed in the pump and two spares.

The front cover shall include handles or other lifting devices for safe removal if cover weight exceeds 50 lbs. Both front and rear rotor case cover plates shall be fitted with a renewable hardened wear surfacing, minimum 550 Brinell, secured to the pump. The pump case top and bottom shall be grey cast iron 700 Brinell replaceable wearing surfaces and shall be provided on the top and bottom castings.

The pump bearings and timing gears shall run in oil and shall be mounted in a gear case contiguous with the pump case. The gear case shall be fitted with a sight gage and oil fill and drain connections. Cartridge style silicon carbide faced mechanical seals, replaceable through the front cover, shall be provided for the rotor shafts. Mechanical seals shall be lubricated by a static bath of oil. Pump shafts shall be a minimum of 85 mm where lobes, bearings, and mechanical seals come in contact with the shaft to minimize potential shaft fatigue. The front cover plate shall utilize O-ring gaskets and quick removal stainless steel nuts. Pump connections shall be ANSI 150-pound flanges.

The pump must be designed with an outlet between the pumping head containing the sludge and the timing gear box such that a leak in the shaft seal will not allow sludge to run into the timing gear box. Bearings and timing gears shall run in an oil chamber provided with a sight glass level with the centerline of the lower shaft.

**B. Motor And Drive Unit:**

The pump drive shaft shall be directly connected to the motor output shaft via a gear reducer. The gear reducer shall be provided between the motor and the pump output shaft. The reducer shall be parallel gear type directly coupled to the C-face of the motor. The reducer shall be severe duty, AGMA 6019-E Class II gear case hardened, AGMA 6010-E rated 1.4 service factor based upon motor nameplate horsepower, single or double reduction parallel shaft helical drive. Speed shall be 1800 rpm maximum. Motor and gear reducer shall be provided, directly coupled via C-face, with an in-line flexible coupling connection to the pump input shaft.

Flexible forged steel coupling shall be an approved type for connecting the pump, reducer, and motor. The couplings shall be of the proper size to transmit the power required to drive the pump under all conditions of operation, and the couplings shall be suitably lubricated and designed for long periods of continuous operation. Coupling design shall take care of inaccuracies of alignment and permit axial adjustment. Coupling construction shall be such that either shaft or a unit may be removed without disturbing adjustment of the other. Shaft couplings shall be Falk Wrap Flex 80R (pump to reducer) and Falk Wrap Flex 50R (reducer to motor), as a minimum. OSHA approved coupling guards shall be furnished over all couplings.

The pump drive shaft shall be constructed of carbon steel and be appropriately sized and heat treated to ensure a smooth operation and concentric positioning on the rotors. The motor driven shaft shall be either the upper shaft or lower shaft as determined by the centerline height of the drive. The shaft shall be non-wetted at all points and seated from the pumped liquid. The shafts shall be fitted with replaceable stainless steel sleeves. The pump manufacturer shall be responsible for the fixed gear reduction between the motor and the pump. The reduction ratio shall be that required to operate the pump at its maximum operating speed when the motor is operating at its nominal rated full speed.

The motor shall be a direct drive with gear reducers, shaft couplings, and guards. Unless otherwise noted, motors shall be energy-efficient Type 2 motors in accordance with Section 11060.

**C. Base:**

Pump base and support shall be rigidly mounted. Baseplates shall be plate or fabricated structural steel baseplates with thickened steel mounting pads for doweling and bolting equipment to the baseplate. The baseplates may be "T" or "L" shaped to accommodate the equipment drive and accessories. Perimeter members shall be beams with a minimum depth equal to 1/10th of the longest dimension of the baseplate. Beam depth need not exceed 14 inches provided that the deflection and misalignment is kept within acceptable limits as determined by the manufacturer. Baseplates for split case pumps shall include supports for suction and discharge elbows, if required by the specified configuration. Pumps and drive assemblies shall be supported on common base pads or pedestals. Terminations requiring connections to the base shall be nuts welded to the bottom side of the base and plugged with cork, plastic plugs or grease, or acorn nuts. Grout holes shall be provided for the bases of all equipment where vibration isolation is not specified. Sole plates, mounting blocks and baseplates weighing more than 1000 pounds shall be leveled with jackscrews incorporated into the fabrication. Jackscrews shall be located in thickened pads or otherwise in sufficient metal to provide ease in adjusting level.



#### D. Suction And Discharge Ports:

The internal rotor case surface shall provide a smooth transition from circular port connections at the flanges, to a full width rectangular port at the rotor chamber, with a greater cross sectional area than at the flanged port connection, to allow for unimpeded passage of solids. Suction and discharge ports shall be glass lined and tapped. Taps shall be 1.5 inch diameter and plugged.

Suction and discharge ports shall be glass lined with a dual layer coating system of vitreous material to a minimum thickness of 10 mils. Glass lining shall provide continuous coverage as tested by a low voltage holiday detector with only isolated voids permitted due to casting anomalies.

### 2.04 Tools And Spare Parts

One set of tools shall be provided for servicing all pumps. In addition, the following spare parts shall be provided for each size and type of pump:

- (2 sets) ..... drive unit seals.
- (2 sets) ..... spare rotor sets, as specified.
- (1 rebuild kit) ..... including: O-rings, gaskets and wear plates.

Spare parts shall be tagged and stored.

### 2.05 Product Data

The following product data shall be provided:

1. Applicable operating and maintenance information, including but not limited to:
  - a. Lubrication information: manufacturer's recommendations regarding the lubricants to be used and lubrication schedule to be followed.
  - b. Installation and startup procedures: manufacturer's recommendations for installation, adjustment, calibration, and troubleshooting.
  - c. Operating procedures: manufacturer's recommended step-by-step procedures for starting, operating, and stopping the equipment under specified modes of operation.
  - d. Preventive maintenance procedures: manufacturer's recommended steps and schedules for maintaining the equipment.
  - e. Overhaul instructions: manufacturer's directions for the disassembly, repair, and reassembly of the equipment, and any safety precautions that must be observed while performing the work.
  - f. Spare parts: Detail any special storage precautions which may be required, as well as the generic title and identification number of each component part of the equipment.

## **PART 3--EXECUTION**

### **3.01 Transmittal Procedure**

#### **A. Submittal Completeness**

1. Submittals without all required information are not acceptable and may be returned. The Project Representative may choose to put an incomplete submittal on hold for up to seven days to allow time for the Manufacturer to provide missing information.

#### **B. Review Procedure**

1. Unless otherwise specified, for each submittal, submit the following:
  - a. One reproducible original of all submitted information. Individual sheets shall not exceed 22 inches x 34 inches.
  - b. Seven additional copies of each submittal including all submitted information.
  - c. Certificates: Will be considered as information. No copy shall be returned.
2. Unless otherwise specified, within 30 days after receipt of each submittal or resubmittal, the submittal or resubmittal will be returned to the Manufacturer. The returned material will consist of 3 marked-up copies of the submittal. The returned submittal will indicate one of the following actions:
  - a. If the review indicates that the submittal is in general conformance with the Contract, the submittal copies shall be marked "No Exceptions Taken" and given a Review Action of "1." In this case, implement the work covered in the submittal.
  - b. If the review indicates that the submittal requires limited corrections, the submittal copies will be marked "Note Markings" and given a Review Action of "2." In this case, begin to implement the work covered in the submittal in accordance with the markings noted. Where submittal information is to be incorporated in O&M data, a corrected copy shall be resubmitted; otherwise, no further action is required.
  - c. If the review reveals the submittal is insufficient and contains incorrect data and the comments are of a nature that can be confirmed, the submittal copies shall be marked "Comments Attached --Confirm" and given a Review Action of "3." A Review Action "3" does not allow implementation of the work covered by the submittal until the information requested to be confirmed in the submittal has been revised, resubmitted, and returned to the Contractor with a Review Action of either "1" or "2."
  - d. If the review reveals the submittal is insufficient or contains incorrect data and the comments require that the submittal be revised and resubmitted, the submittal copies shall be marked "Comments Attached --Resubmit" and given a Review Action of "4." A Review Action "4" does not allow implementation of the work covered by the submittal until the information in the submittal has been revised, resubmitted, and returned to the Contractor with a Review Action of either "1" or "2."
  - e. If the review reveals that the submittal is not in general conformance with the Contract, or if the submittal is incomplete, the submittal copies shall be marked "Rejected" and given a Review Action of "5." Submittals containing deviations or substitutions from Contract which have not been clearly identified by the Contractor fall into this category. A Review Action "5" does not allow implementation of the work covered by the submittal until the information in the submittal has been revised, resubmitted, and returned with a Review Action of either "1" or "2."

#### **C. Effect of Review Submittals**

1. Review of submittals shall not relieve the Manufacturer of its responsibility for errors therein and shall not be regarded as an assumption of risks or liability by the County.

### **3.02 Installation**

The pumping unit shall be aligned, connected, and installed by King County South Treatment Plant (STP) maintenance staff according to manufacturer's installation instructions and under direct direction of the Pump Manufacturer at the location specified. A factory trained manufacturer's representative shall be present at the specified site to assist and supervise the STP Maintenance Staff during installation for a minimum of 8 hours over a single day. The factory trained manufacturer's representative shall certify the installation of the rotary lobe pump.

### **3.03 Field Testing**

- A. The pump will be completely field tested to demonstrate compliance with the performance requirements. Requirements for testing the specified product after installation are:
- B. All equipment and controls will be calibrated and then checked for accuracy by the plant staff.
- C. All control systems will be run and checked in start-up, shut-down, and continuous operation and shall include a demonstration and verification of all interlock and alarm functions.
- D. Performance testing
  - 1. Performance testing shall be completed on thickened sludge at approximately 7.0% total solids.
  - 2. Operate the lobe pump for an 8 hour period at the designed flow rate, 1000 gpm.
- E. Any malfunctions appearing during the tests will be corrected by replacement of defective equipment or parts and adjustment of maladjusted parts or equipment. Additional testing will be performed, as directed by the Project Representative, to assure that the replaced or readjusted equipment will perform satisfactorily.
- F. Contractor shall Provide a factory-trained manufacturer's representative at the site for the field testing. Specified durations do not include travel time to or from the project site. The factory-trained manufacturer's representative shall assist, supervise, and inspect the STP Maintenance Staff activities during the performance testing. Provide 8 hours over a single day for inspection during the performance testing. Complete Form 11000-A, Section 11000.

### **3.04 Warranty**

The warranty shall include: 5 years on gear reducer and pump bearings, 2 years on the mechanical seal(s), and 1 year or 6000 operating hours on lobes and wear plates. All warranty work shall be performed by the manufacturer's factory authorized and trained agent within 30 days of notification of failure. Every pump part which fails during the warranty period shall be replaced to new condition by the Manufacturer, and this shall include wearing parts, such as lobes and wear plates. The cost of the wearing parts shall be pro-rated based on the warranty life left on the worn out parts. Failure of the wearing parts will be defined as the point when the pump can no longer meet an 800 gpm flow rate. The warranty cost of non wearing parts, including but not limited to the motor, gear reducer, and pump bearings, shall be 100 percent full payment.


### **3.05 Training**

The Pump Manufacturer shall train plant personnel in operating and maintenance procedures for the equipment provided under this section for not less than 8 hours. Training shall include instruction in field adjustment of rotor clearances and complete disassembly and subsequent reassembly of the pump. Certify completion of training on Form 11000-B, Section 11000.

**\*\*End Of Section\*\***

## BID OPENING LABEL

Complete the form below (or a reasonable facsimile thereof) and affix to the exterior lower left hand corner of the submission package.

<b>U R G E N T – SEALED BID ENCLOSED</b> <b>Do Not Delay – Deliver Immediately</b>	
<b>U R G E N T</b>	 <b>King County</b> King County Procurement & Contract Services Section Exchange Building, 8 <sup>th</sup> Floor 821 2nd Ave., EXC-FI-0862 Seattle, WA 98104-1598
	<b>Bid No.</b> ITB 06-049 PXR
	<b>Bid Title</b> Constant Speed Rotary Lobe Pump
	<b>Due Date</b>
	<b>Vendor</b>
<b>U R G E N T</b>	